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Skeptical Inquirer

THE MAGAZINE FOR SCIENCE AND REASON

Volume 26, No. 3 • May/June 2002

Who Abused Jane Doe?

The Hazards of the Single Case History

Case Study

Is Astrology's Mars Effect a Social Effect?

Mothman, Saucers, and M.I.B.: Gray Barker's Book of Bunk

Albert Abrams, The King of Quacks

Published by the Committee for the Scientific Investigation of Claims of the Paranormal

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The SKEPTICAL INQUIRER (ISSN 0194-6730) is published bimonthly by the Committee for the Scientific Investigation of Claims of the Paranormal, 1310 Sweet Home Rd., Amherst, NY 14228. Printed in U.S.A. Periodicals postage paid at Buffalo, NY. Subscription prices: one year (six issues), $35; two years, $58; three years, $81; single issue, $4.95. Canadian and foreign orders: Payment in U.S. funds drawn on a U.S. bank must accompany orders; please add US$10 per year for shipping. Canadian and foreign customers are encouraged to use Visa or MasterCard.

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The Hazards of the Single Case History Part 1

Case histories have played a long-standing role in the history of science, medicine, and mental health. But they can mislead—especially when only half the story is told. Here's a case history about a case history that proves just that.

ELIZABETH F. LOFTUS and MELVIN J. GUYER

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A re-analysis of the Gauquelin data suggests that hitherto baffling planetary effects may be simple social effects in disguise.

GEOFFREY DEAN

39 Gray Barker's Book of Bunk
Mothman, Saucers, and MIB

Those who seek the elusive truth behind the "Men in Black" and "Mothman" myths should know that material touched by Gray Barker's enterprising hand is tainted by self-serving deceit. He launched hoaxes, joined others' deceptions, and manipulated people's beliefs. "And I," says our author, "was one of those who helped."

JOHN C. SHERWOOD

45 The King of Quacks: Albert Abrams, M.D.

One of the greatest quacks of all time was Albert Abrams, M.D. Abrams earned the dubious distinction of "the dean of twentieth century charlatans" by the American Medical Association.

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EDITOR'S NOTE

Controversies and Case Studies

The best introduction to the extraordinary narrative we begin in this issue by Elizabeth Loftus and Melvin Guyer (first of two parts) is Loftus's impassioned commentary "When Scientific Evidence is the Enemy," in our November/December 2001 issue. The two are linked. The commentary was her acceptance speech upon receiving the American Psychological Society's William James Fellow Award. The citation honored her courage and pioneering scientific work in showing that reconstructive memory processes rather than past objective reality have often been at the root of controversial cases alleging "recovered memories" of childhood abuse. The citation spoke of her strength in weathering the "widespread scorn and oppression that unfortunately but inevitably accompanies clear and compelling scientific data that have the effrontery to fly in the face of dearly held beliefs." At that time Loftus reported that she continued to be the target of efforts to censor her views. She was then under a gag order and could provide no details. The story can now be told.

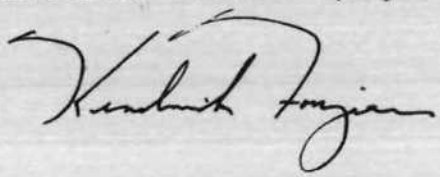
In "Who Abused Jane Doe? The Hazards of a Single Case Study," which begins in this issue, Loftus (professor of psychology at the University of Washington) and Guyer (professor of psychology at the University of Michigan Medical School) write a compelling narrative of their involvement in the case of a young woman called Jane Doe, whose biological and divorced parents were entangled in a vicious custody dispute that included allegations of sexual and physical abuse of the child.

The two-part article is, as they say, "a case study of a case study—a cautionary tale." It is an absorbing and sobering chronicle of their efforts to get at the real truth of the matter. And it has implications far beyond this particular case. We hope to publish in a later issue further perspective on the battles and travails Loftus and Guyer had to endure in carrying out their investigations.

* * *

Another controversial issue going back years (in this case decades) involving acrimonious disputes, this time over interpretations of data, is the topic of Geoffrey Dean's article "Is the Mars Effect a Social Effect?" Dean, a meticulous critical investigator of astrological claims, just may have found a way out of the whole "Mars Effect" mess, a possible explanation that hints strongly that the problem may not be with the neoastrologer-psychologist Michel Gauquelin's handling or interpretations of the extensive birth data he had collected but with the data's origin. Dean's insights point a way to understanding the "Mars Effect" data as a social effect—human biases in preferentially reporting certain birth times and dates and eschewing others. If Dean's analysis is supported by further study, the effects Gauquelin found were there not because Gauquelin selected or manipulated the data, and not because the planetary positions at birth affect human destiny, but because the parents who were the original sources of the birth data had social reasons for reporting slightly fudged times and dates.

Dean provides intriguing evidence to back up that hypothesis. He is careful not to claim he has explained the Mars Effect; he claims only that the Mars effect involves social effects that need to be controlled before we can proceed further. It will be interesting to see how both sides in this controversy respond.



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AAAS Session Provides Glimpse at Science-end of Alternative Medicine Issues, Research

KENDRICK FRAZIER

The more scientific end of the spectrum of alternative medicine got a hearing at the annual meeting of the American Association for the Advancement of Science (AAAS) in Boston in February. Generally the kind of wacky and questionable stuff that critics and skeptics of alternative medicine focus on was nowhere to be seen, and in both the February 17 session and in a news briefing for science reporters the day before, presenters described real scientific investigations and had all the right cautionary words about fringier topics.

The half-day session was titled "The Science Underlying Complementary and Alternative Medicine." It was organized by Stephen E. Straus, Director of the National Center for Complementary and Alternative Medicine (NCCAM) within the National Institutes of Health; Donald Krogstan of Tulane University; and Sondra Schlesinger of the Washington University School of Medicine.

Straus, a physician, has the task of trying to bring good science to NCCAM while not offending those influential congressional advocates of alternative and untested therapies who provide a strong political and funding base for the center, whose annual budget for extramural research now exceeds $100 million. Most observers say he is a master at this. [See also "Bioterrorism and the NCCAM: The Selling of Complementary and Alternative Medicine," by Kimball C. Atwood IV, M.D., SKEPTICAL INQUIRER, March/April 2002.] At the meeting and the news briefing, Straus certainly said all the right words for his audiences of scientists, physicians, and at times skeptical science journalists. He offered up the image of a taxpayer-funded agency doing its best to sift through all kinds of claims for nuggets of scientific and therapeutic value.

"Our role is to stimulate and support the best scientific modalities," he told the media. Some of the therapies NCCAM studies "may hold germs of truth." Some, he said, "will be proven safe and effective, some unsafe and ineffective." He said the agency seeks to provide the public guidance to sort through "folklore and rumor."

In the news conference the media were about equally divided between those interested in the scientific presentations to be given and those interested in grilling Straus about the controversies over the scientific value of NCCAM and alternative medicine in general.

Isn't NCCAM a highly political agency, influenced by the views of the politicians who helped set it up and continue to support it with ever increasing funding? "Complementary and alternative medicine is popular," Straus pointed out. The strong political support NCCAM enjoys is helping it move forward, he said. "It provides the wherewithal to separate the wheat from the chaff."

What would it take to say all of it [alternative medicine] "is bunk?" he was asked. "Our job is not debunking," he said, but only finding out what works and what doesn't. "In the U.S. people can take things without proof [of efficacy]," he said. "We can sit back and rail about this or we can try to set out and find" what the facts are.

He openly acknowledged that NCCAM's studies haven't yet produced any significant results one way or another, but he maintained that larger studies now under way are likelier to do so.

He was asked directly about a new study just published in the *Scientific Review of Alternative Medicine* concluding that the grants and awards issued by NCCAM and its predecessor Office of Alternative Medicine have produced no useful information (see story on next page). He didn't quibble with the conclusion but again emphasized that larger studies will be necessary to get definitive results. "If something [turns out to be] ineffective, I have no need to fund further studies of that topic," he said.

In his presentation introducing the symposium on Sunday morning, Straus again offered numerous cautions. He spoke of the strong influence of people's beliefs, the unintended consequences of such things as botanical and drug interactions, "studies that provide important cautionary tales" (such as DiBella multitherapy, which claimed 10,000 successful patients, whereas subsequent studies showed "zero evidence of remissions"), and important issues of mind/body medicine.

But he maintained that good science could be done in the field. "Our speakers today will tell you that it's not all a bunch of nonsense. There is interesting and exciting science to do."

In answer to questions from the audience, Straus said, "I believe that the American people are not stupid." He said they seek good information, but the problem is that if reliable information is not provided, it is human nature for people to "attach to anecdotes." Said Straus: "We at least can provide the public with better information to make those decisions. We want to elevate the dialogue. We want to get it out of the streets and get it into the hospitals and laboratories."

* * *

As for the rest of the symposium, there were some interesting reports:

Jonathan Davidson (Duke University Department of Psychiatry) provided a

critical analysis of previous studies of the efficacy of St. John's Wort (hypericum) on major depression. Sales of St. John's Wort are now four times those of Prozac. There is, he said, "a little evidence that St. John's Wort helps the seasonal blues, or SAD" (seasonal affective disorder). But the study that really got the herb's sale going was the so-called Linde study in 1996, an analysis of twenty-three randomized trials. It claimed a response in treating depression of 55 percent—equivalent to that of prescription agents—compared with 22 percent for a placebo.

"However," said Davidson, "there were limitations" to the Linde study, including small sample sizes and lack of long-term follow-up. He also finds "a number of things puzzling" about the study, including a smaller-than-expected placebo effect (30 to 50 percent is typical in depression). "It's not quite clear to me how you would get these results," he said.

Post-Linde (since 1997) studies of hypericum with large samples have had some "disappointingly low" results, with odds of getting better with the treatment at 2.1, "a more realistic" finding compared with Linde's 5.5, but still suggestive "of some small effect," Davidson said.

Davidson had hoped to present at the symposium results of his own NIH-sponsored study aimed at testing the efficacy and safety of hypericum in major depressive disorder. It's a multicenter, double-blind, placebo-controlled trial of hypericum extract. He described the study protocol, which he considers "a kind of model for studies of depression," but said the report is still in peer review in a major journal. "I hope to be able to share results in public before too long."

Two studies described in the symposium presented some perhaps surprising findings.

• Fabrizio Benedetti (University of Turin Medical School, Italy) described studies of the neurobiology of the placebo effect in sensory and motor systems. He said studies provide three lines of evidence that the placebo effect is physiologically real and that placebo analgesia is mediated by the body's endogenous opioid systems. "In other words, the appropriate context and expectation is capable of triggering the release of endogenous opioids in the brain," leading to relief of pain. "We now know that placebos induce the release of endogenous opioids in painful conditions and of endogenous dopamine in motor disorders, like Parkinson's disease," said Benedetti. "Both endogenous opioids and dopamine appear to be released as neurotransmitters at the level of specific neurochemical pathways, rather than as systemic modulators/hormones."

• David Spiegel (Stanford University School of Medicine) described studies using positron emission tomography (PET) scans of the brain to reveal effects of hypnosis on color vision. The PET scan examined blood flow of "highly hypnotizable" patients during hypnotic states and showed that blood flow increased when the hypnotized patient believed he was looking at colors, regardless whether the pattern exhibited was in color or in gray scale. The hypnotic illusion of color induced blood flow change consistent with observing color. "The subjective experience of color alteration in hypnosis was associated with activation and deactivation of color processing regions of the brain," said Spiegel. "This provides evidence that hypnotic alteration of perception changes perceptual experience and not merely reports of that experience."

Kendrick Frazier is Editor of the SKEPTICAL INQUIRER.

Study Finds NCCAM Grants Have Produced No Useful Results

A newly published independent study of grants and reports from the first nine years of existence of the Office of Alternative Medicine and its successor agency the National Center for Complementary and Alternative Medicine (NCCAM) has found that the awards have not produced useful information.

The study is published in *The Scientific Review of Alternative Medicine* (5[4]:205–207, 2001) by Saul Green, a former professor of biochemistry at Sloan-Kettering Cancer Institute.

Congressional advocates of alternative medicine caused OAM to be established in 1992 within the National Institutes of Health, supposedly to carry out rigorous evaluation of "alternative" medical treatment methods and to determine their effectiveness. With some intense political support, congressional appropriations for OAM and its successor NCCAM have increased yearly. Its research funding now stands at $105 million this fiscal year.

Green, a noted critic of alternative medicine, downloaded from the NCCAM Web site records of grants and awards and tabulated them. He also examined published reports of the investigations, although he found these to exist in small numbers.

Among his findings: "Many publications were found to be repetitions of previously performed research, reviews, and commentaries—the latter two not requiring large grants to perform. . . . Many projects seem to be devoted to implausible methods. No clearly positive or negative findings have been reported for any method, yet many reports call for continuing research."

Green says most of the people who were appointed to the OAM advisory committees were strong advocates of alternative medicine, and many of them were reappointed to the NCCAM advisory committees.

The trend continues, he says. "More recently appointed members of the advisory committees are largely advocates of aberrant methods. Few members have been chosen to serve on these committees from the ranks of the standard medical science community."

"Considering the total amount of grant funding awarded by both the OAM and the NCCAM," says Green, "few research papers containing results that can be independently reproduced have been written."

"Of interest," he says, "was the finding that ten individuals who were awarded NCCAM grants accounted for nearly 20 percent of the total funding granted to all recipients in the period between 1998 and 2000. Of the total number of reports written by recipients of these grants, most were not original research results but appeared to be reviews of the results of their previous studies or commentary on the work of others.

"To my knowledge and based on a review of abstracts published by the OAM/NCCAM, no report stated that a treatment did not work." He says the agency's mandate, originally given by Sen. Tom Harkin, D-Iowa, who was largely instrumental in setting up the OAM in 1992, was to determine, by rigorous scientific research, whether complementary or alternative treatments were worthless and if worthless should be discarded.

"In the past nine years," says Green, "no negative result has been published, nor have any of the methods studied been shown to work to the satisfaction of the medical science community."

Concludes Green: "Between 1993 and 2000, close to $110 million in grants have been awarded" by OAM and NCCAM. "So far, few basic science experiments and clinical trials have been performed. Reports in the literature are mainly reviews and commentaries, and no method has been determined to be either useful or ineffective on the basis of OAM or NCCAM grants. . . . On the basis of grants and reports from the first nine years of existence, the NCCAM awards have not produced useful information."

NCCAM Director Stephen E. Straus, M.D., was asked about Green's *SRAM* study conclusions during a February 16, 2002, news conference at the annual meeting of the American Association for the Advancement of Science in Boston, the day before a session devoted to the science underlying alternative medicine (see article on page 5).

Straus acknowledged that no definitive results have emerged as yet from NCCAM-funded grants. But he said that in the early years many of the studies were too small in scale to be useful and that larger studies were needed and now being done.

"I do agree that the kinds of things [studied] in the early years were not the kind to get good results. We need larger studies."

—*Kendrick Frazier*

New Journal Dedicated to Distinguishing Science from Pseudoscience in Mental Health

THE SCIENTIFIC REVIEW OF MENTAL HEALTH PRACTICE

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As regular readers of the SKEPTICAL INQUIRER are well aware, increasing concerns have been voiced over the past decade regarding the widening gap between science and practice in clinical psychology, psychiatry, social work, counseling, and allied disciplines. Suggestive techniques (e.g., hypnosis) for "recovering" purported early memories of abuse, facilitated communication, eye movement desensitization and reprocessing (EMDR), Thought Field Therapy, "rebirthing" therapy, and the Rorschach Inkblot Test are merely a handful of the mental health methods featured in SKEPTICAL INQUIRER whose scientific support is questionable or weak. These and other unproven techniques may be harmful in certain cases, as evidenced by the tragic death two years ago of ten-year-old Candace Newmaker in Colorado. Still other techniques, although perhaps not harmful *per se*, may deprive mental health consumers of valuable time and resources or lead them to forgo effective treatments.

Nevertheless, until now there has existed no journal dedicated to distinguishing scientifically unsupported from scientifically supported claims in mental health practice. This spring, Prometheus Books (the publisher of *The Scientific Review of Alternative Medicine*) will fill this void with the launching of a new journal, *The Scientific Review of Mental Health Practice*, which will be edited by Scott Lilienfeld of Emory University's Department of Psychology. This peer-reviewed journal, which will initially appear twice a year, will be the first periodical devoted exclusively to critically examining novel, controversial, and unorthodox claims in clinical psychology, psychiatry, social work, and related disciplines. The journal will focus on evaluating psychotherapeutic, assessment, and diagnostic techniques that are either unsubstantiated or largely untested, and will publish both literature reviews and controlled investigations. It will also highlight novel treatments and assessment methods that are either promising or that have demonstrated strong empirical support. Articles slated for the 2002 issues of the journal include scientific investigations of EMDR, rebirthing and related techniques (e.g., reparenting), fringe treatments for infantile autism, Munchausen's by proxy (a controversial psychiatric diagnosis that describes the behavior of parents who intentionally produce illnesses in their children), and neurotherapy (a popular but largely unsubstantiated treatment for childhood psychiatric disorders that is based on brain wave biofeedback).

The Scientific Review of Mental Health Practice has been endorsed by the newly formed Council for Scientific

Mental Health Practice, an umbrella group of over seventy distinguished psychologists, psychiatrists, and social workers from numerous countries, including the United States, Canada, Australia, the United Kingdom, the Netherlands, Italy, and Israel. The members of this Council include many prominent researchers and authors familiar to the readers of SKEPTICAL INQUIRER, such as Elizabeth Loftus, Carol Tavris, Robert Baker, Barry Beyerstein, Wallace Sampson, and Susan Blackmore.

To order by credit card call (800) 421-0351, or write to *The Scientific Review of Mental Health Practice*, 59 John Glenn Dr., Amherst, NY 14228-2197.

—Scott Lilienfeld

Scott O. Lilienfeld, Ph.D., is the founder and editor of The Scientific Review of Mental Health Practice, *a CSICOP Fellow, and a SKEPTICAL INQUIRER consulting editor.*

Rash of Mysterious Rashes May Be Linked to Mass Hysteria

For the past six months, a mysterious skin rash affecting thousands of mainly primary schoolchildren has been reported at widely separated locations in fourteen states. The first outbreak occurred in Indiana in October 2001. The rashes tend to last anywhere from a few hours to two weeks, are not accompanied by other symptoms, and usually go away when the students leave school. In at least a few cases, students faked the rash by rubbing themselves with sandpaper in an effort to shut down the school.

Health investigator Dr. Norman Sykes stated that "For something like this to occur almost simultaneously in different parts of the country is, to my knowledge, unprecedented." According to the Centers for Disease Control and Prevention in Atlanta, the rashes appear to be different kinds with different causes. While a virus may be causing some of the incidents, a national study of the rashes concluded, "With 53 million young people attending 117,000 schools every day in the United States, it is expected that rashes from a wide variety of causes will be observed."

Health officials have ruled out the possibility of environmental causes (solvents, bacteria, etc.), with the exception of one school which had high levels of skin and dust particles. The rash of rashes began during the anthrax scare, and it's possible that they have always existed in the school system, but during the present bio-terror concern, students have been paying more attention to their skin and school nurses are more likely to report such incidents. Dry skin and itching are notorious during the winter months in the U.S. as people spend more time indoors and the air is typically dry from the heating system.

—Robert Bartholomew and Benjamin Radford

Robert Bartholomew is a sociologist and freelance writer living in Vermont; Benjamin Radford is a writer and managing editor of the SKEPTICAL INQUIRER.

Ohio and Washington: Agendas Push Questionable Science

As this issue was nearing publication, two major disputes involving the interjection of questionable science, or worse, into the political system were coming to a head.

In Ohio, scientists and educators were battling the latest efforts of creationists and those with hidden ideological agendas to introduce creationism in the guise of "intelligent design" into Ohio schools' science curricula. Proponents of good science brought out big guns like physics professor and author Lawrence Krauss (*The Physics of Star Trek*) and Brown University biologist Kenneth Miller (*Finding Darwin's God*) to strongly condemn the efforts and to show how ID is both bad science and bad religion. It appears that wiser heads among the state's politicians may have prevailed. On March 12, the Ohio House said the issue wasn't for the legislature to decide, effectively killing three bills pro-creationist legislators had produced. As with other states, vigilance and action by scientists and science educators must be kept up.

In Washington, D.C., a White House Commission on Complementary and Alternative Medicine Policy appointed during the closing days of the Clinton administration was about to turn over its final report. The commission is made up almost entirely of alternative medicine advocates; few if any of them have done any published scientific research. Nevertheless the commission was expected to recommend expanded federal spending and other major policy initiatives to promote taxpayer support of alternative medicine. The hope here too was that cooler heads would prevail. Efforts were underway in the corridors of power to encourage the Bush administration to shelve the report as a bad idea from a previous administration. The outcome will be watched closely.

—Kendrick Frazier

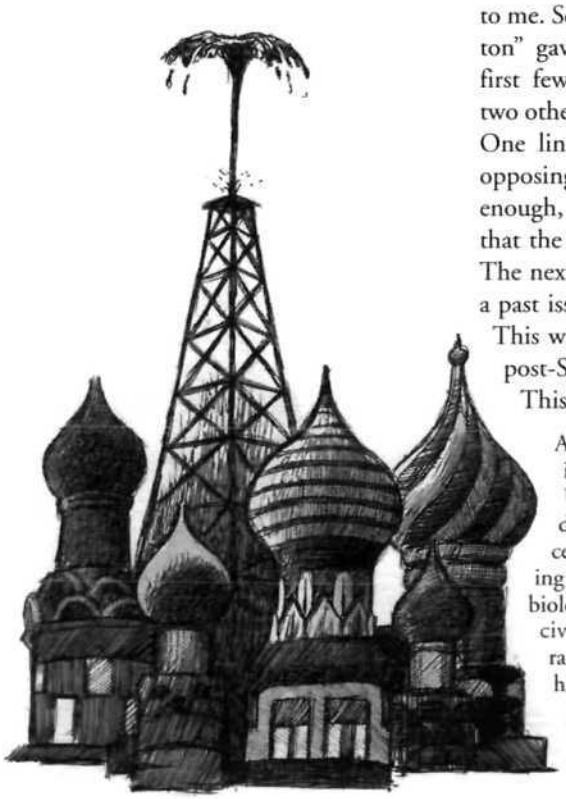
Junk Science in the Oil Patch: Microlepton Fields, Again

Finding oil and gas is a process that combines physics and geology with a lot of engineering technology. Potential drilling sites are located using 3D seismic data and a deep understanding of geology and geophysics. Evaluating a potential site requires drilling a well and recovering actual rock cores. Since recovering rock cores is very expensive and at times risky, various physics-based measurements must be made while the drilling is going on or after the well is drilled to provide additional necessary information. These measurements consist of acoustic travel time, neutron scattering, and gamma-ray scattering to determine the rock properties

(especially the porosity), and various electromagnetic and NMR measurements to determine the properties of the fluids in the rock pores.

Although the physics of these measurements is straightforward, the fact is that many of the properties of the rocks that are needed by the petroleum engineer to evaluate the reservoir cannot be directly measured in situ. These interesting properties have to be inferred through very empirical relationships (which change from field to field) to the properties that can be measured. This process of inference requires highly trained people, and, as one might imagine, is expensive. It also does not always find oil. The uncertainty of success from even the best science-based exploration methods, combined with the huge amounts of money at stake, opens the door to methods that are somewhat less than pure in their science.

A recent example surfaced from a contact in the Middle East. A Russian company, Alkor (www.AlkorInternational.com), is offering to find oil, gas, and minerals deep within the earth through a process called GeoVision. Their starting point is a thorough study of satellite imagery, followed by a helicopter-borne survey. They claim that this combination can reduce the uncertainty to nearly zero. The brochure goes on to describe the economics of drilling with certainty of success rather than uncertainty. The mechanism of the GeoVision method is given as "microlepton radiation." To quote from the Alkor Web site, "The most important point of Microlepton GeoVision Technology is the fact that all physical objects have their own microlepton field. The method is based on the analysis of microlepton emissions of Earth and allows to make accurate forecasts on the existence of various minerals, with the use of space photos and field expedition's results, treated on special equipment."



Now, to a physicist involved in oil and gas exploration for many years, this sounded much too good to be true. Leptons are, of course, physical—a familiar example is the electron. However, "microlepton" was a new term to me. Searching the Web for "microlepton" gave very interesting results. The first few entries were from Alkor and two other companies representing them. One link was to a group in England opposing local drilling for oil. Sure enough, the rationale for drilling was that the Alkor people had run a survey. The next link was surprising—it was to a past issue of the SKEPTICAL INQUIRER! This was from an article on science in post-Soviet Russia (Shmakin 1996). This article states

> A well-known scandal happened in 1991, when physicists of the USSR Academy of Sciences demanded that government cease to support charlatans working on "microlepton fields" (distant biological influence of army and civil inhabitants with "torsion radiation"). About $500 million had been spent on such "investigations." Fortunately, the Supreme Soviet Committee stopped this waste of money. The Academic Department of General Physics and Astronomy at a special session on July 9, 1991, characterized this case as "organized activity of pseudoscience with specific features of large-scale bluff."

The next link in the search was even more revealing. The link was to spiritweb.org. This was an article by a Russian author describing deriving equations related to those of Schrödinger and Dirac and relating these to karma (Iskakov 1994):

> The study of psychic phenomena dictated the need to define the concept of the information-energy field. Its material medium, according to contemporary notions, may be a global lepton gas, consisting of extremely light particles, microleptons, with a mass of 10^{-40}–10^{-30} grams. Microleptons are much lighter than electrons and are capable of freely penetrating any body in the Universe.

The only other links were to other spiritweb.org sites.

So much for the science in the GeoVision method. My company maintains a research liaison group in Moscow, and I asked the head of that group if he had heard of Alkor. His reply is enlightening: "I have been offered that stuff some time ago already. I met some of the guys: it is hard to believe but they even seem of good faith; I managed to decline politely without laughing. You can find plenty about it on the Web. Also hard to believe: they do have a real (Russian) patent!"

So, in oilfield exploration, as in all other endeavors, Caveat Emptor!

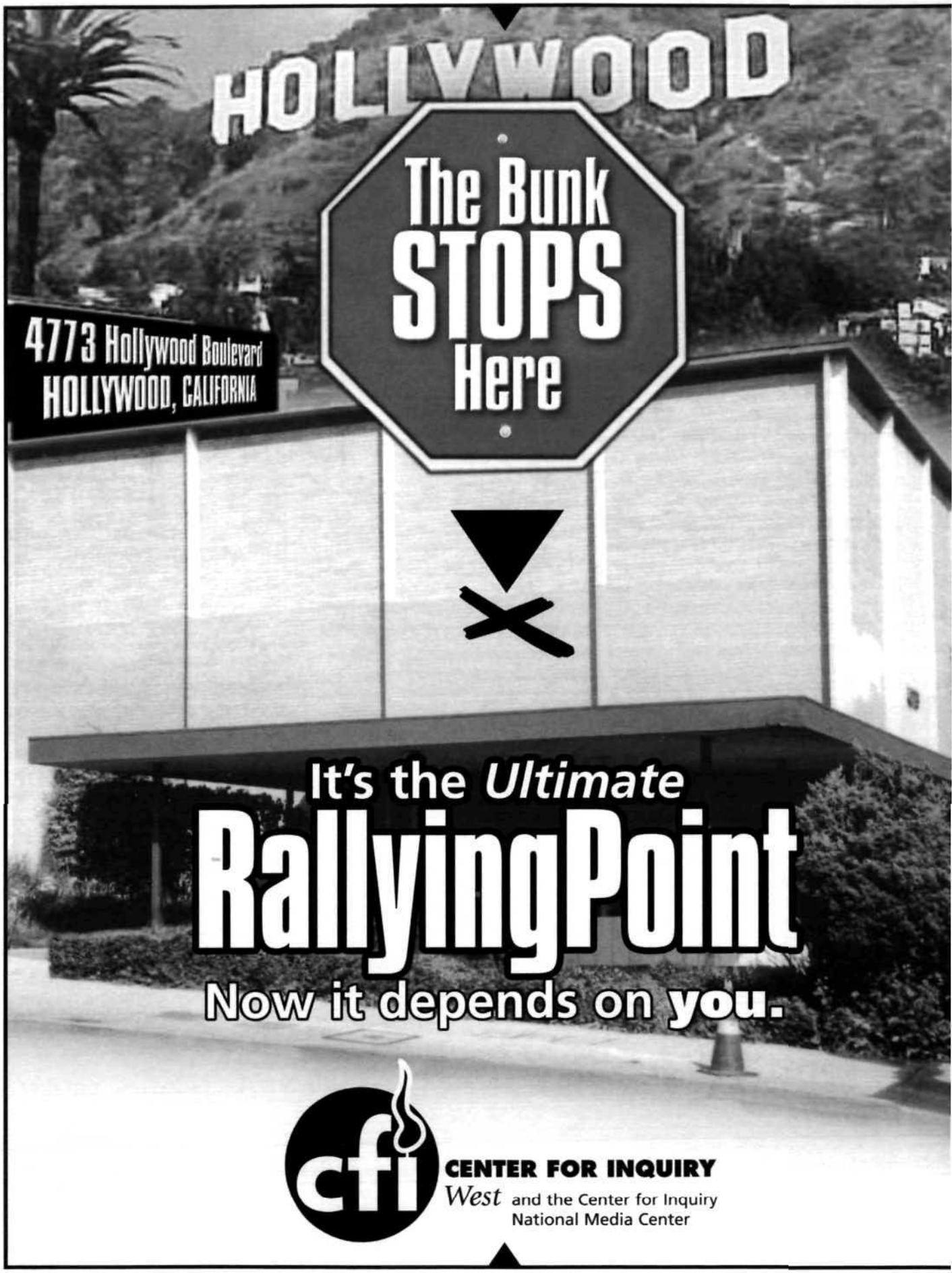
References

Iskakov, B., Hatonn, and Glenda Stocks. 1994. Quantum mechanics and some surprises of creation. At www.spiritweb.org/Spirit/religion-eq-science.html.

Shmakin, B. 1996. A view from Russia: Popularization of science as a tool against antiscience. SKEPTICAL INQUIRER 20 (4).

—Tom Barber

Tom Barber is a physicist working in the field of borehole geophysics in Houston, Texas.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THE PROJECT IS LAUNCHED.

No longer a dream, reality has begun for our permanent Center for Inquiry – West. After a five-year search we have purchased a building at 4773 Hollywood Boulevard, in the heart of Hollywood. This *ultimate Rallying Point* for skeptics will house CFI-West's regional programs as well as Center for Inquiry's™ ***new*** *national Media Center.* This development has enormous importance for supporters of critical thinking everywhere, **especially** readers of *Skeptical Inquirer.*

And now it's up to our readers and friends. Only **you** can help us fulfill this bold potential. Purchasing the building took $1.6 million, which we must pay back over three years. Renovation will require another $500,000 – creating a 99-seat auditorium, library, exhibit area, media production center, and offices. We're even looking into solar panels so we can generate our own electricity! An additional $495,000 will equip the Media Center and fund its first three years of operation. Finally we must add millions more to endowment, so the new Center will always be fiscally stable.

All told, we need **$5.85 million,** of which less than $2 million has already been raised. It's the greatest challenge skeptics and secular humanists have faced since our community gave more than $5 million to build and endow the Center for Inquiry – International in Amherst, N.Y., from 1991–1995.

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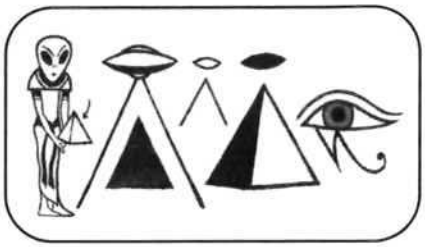
Archaeological Institute Hosts Workshop Session on Combating Pseudoarchaeology



The annual meeting of the Archaeological Institute of America (AIA) was held at the Philadelphia Marriott Hotel on January 3–6, 2002. Tucked in among the fascinating symposia on Greek architecture, ancient iconography, Bronze Age ideology, and Roman sculpture was a workshop titled "Combating Pseudoarchaeology." Organized by Garrett Fagan, assistant professor of classics and ancient Mediterranean studies and history at Penn State University, the session was devoted to the issue of so-called "alternative" prehistory and history. Along with defining, enumerating, and discussing the many guises of pseudoarchaeology, one of the workshop's aims was to begin a conversation within the archaeological community concerning strategies that might be developed in response to popular but unsubstantiated claims made about the human past.

As Fagan pointed out in his introductory remarks, pseudoarchaeology is predicated on the assertion that, in essence, everything we archaeologists think we know about the human past is wrong. Having deconstructed traditional archaeological interpretations as entirely comprised of conjecture, the pseudoarchaeologists provide alternative versions of the human past. For example, traditional archaeologists view human antiquity as explicable by reference to a complex interplay of culture and the physical and social environments in which human beings live.

Pseudoarchaeology, on the other hand, ignores that complexity, proposing simpler—though certainly quite remarkable—scenarios of the human past that present the inconvenient additional problem of having absolutely no evidence in their support. So, instead of the development and evolution of ancient societies being the result of complex cultural evolutionary processes, it is proposed by the "alternative" archaeologists that the human past can be understood only if one accepts:

> 1) The crucial role in human history of catastrophically colliding planets—in the workshop, Egyptologist Donald Redford of Penn State University discussed the claims of Immanuel Velikovsky as these relate to the history of ancient Egypt;
>
> 2) The visitation of Earth in the mists of antiquity by peripatetic extraterrestrial aliens—archaeologist Ken Feder of Central Connecticut State University discussed, among a number of issues, acceptance by university students of the claims of Erich von Däniken that the development of ancient civilizations resulted from the visits of such aliens; or,
>
> 3) The existence of an extraordinarily precocious and now lost ancient civilization which single-handedly inspired the development of all of the "derivative" ancient civilizations with which we are familiar—television science documentary producer Chris Hale related his experiences producing a documentary that addressed claims like these offered by popular writer Graham Hancock.

Oceanographer Nicholas Flemming, of the European Global Ocean Observing System at Southampton Oceanographic Observatory, provided a broad context for the claims of the pseudoarchaeologists and addressed the vexing question: Should professional archaeologists respond to the claims of pseudoarchaeologists or does such a response provide an air of legitimacy to the claimants? Flemming maintained that it is an abrogation of professional responsibility to let invalid claims about the human past stand without response by the scientists who study that past.

Each of the invited workshop participants provided short presentations about a number of elements of pseudoarchaeology. These presentations served as catalysts for discussion among the presenters as well as with members of the audience. The sizeable number of workshop attendees, and the robust discussions that characterized the entire session, is a reflection of the seriousness with which the archaeological community views the issue of pseudoarchaeology. Though there were varying perspectives expressed concerning the best strategies for response, it is fair to state that most of those in attendance were in agreement that pseudoarchaeology aimed at a mass audience poses a genuine danger to a field of study that depends on public interest and support for its work. It is hoped that this workshop will lead to additional discussions and a coordinated response to the nonsense that dogs our discipline.

—Kenneth L. Feder

Kenneth L. Feder is an archaeologist at Central Connecticut State University and author of Frauds, Myths, and Mysteries: Science and Pseudoscience in Archaeology. *He is a CSICOP Fellow.*

Astronomers Respond to Claims Universe is Young with Material for Classroom Teachers

In several U.S. states there have been demands that discussions of the Big Bang and the vast age of the cosmos be excluded from science curricula in K–12 classrooms. In response, the Astronomy Education Board of the American Astronomical Society (AAS) has put together an article for teachers on how astronomers know that the universe is old and that it changes with time.

The illustrated article has been posted on the Web at www.astrosociety.org/education/publications/tnl/56/. It is a special issue of *The Universe in the Classroom*, a newsletter on teaching

astronomy in grades 3–12, published by the Astronomical Society of the Pacific.

The article explains the evidence showing that we live in a universe that is between 10 billion and 15 billion years old and that both the universe and its contents undergo evolutionary change. It is designed to help teachers explain these ideas to their classes and concerned community members. A list of written and Web resources is also included.

The article grew out of a formal statement on behalf of the astronomical community issued by the Council of the AAS in 2000, when the Kansas State Board of Education in 1999 adopted state standards that eliminated both evolution and Big Bang cosmology.

While those standards have now been repealed, following the election of new Board of Education members, the scientific perspective continues to be questioned in states and communities around the U.S. Both the AAS Council and the Society's Astronomy Education Board believe that astronomers have an obligation to assist teachers in sorting out the evidence supporting the modern view of an ancient universe.

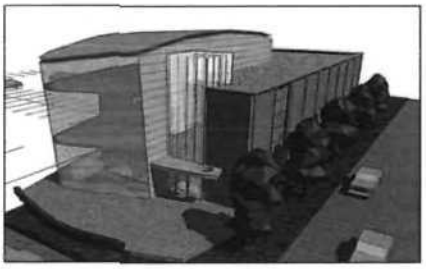
—Andrew Fraknoi

Andrew Fraknoi is an astronomer active in astronomy education at Foothills College, Los Altos Hills, California. He is a CSICOP Fellow.

Dec. 15 Party Features Editors to Celebrate CFI–West Occupancy

The offices of the Center for Inquiry-West were officially transferred to the organization's new building at 4773 Hollywood Blvd., Hollywood, California, on October 18, 2001. The CFI-West staff, Secular Organizations for Sobriety, New Horizons, and Atheists United now occupy the second floor of this new facility. The first floor will be renovated when funding permits.

This move inaugurates the first full-time, fully staffed, skeptic and humanist



facility in the U.S west of the Mississippi River. The Center for Inquiry owns this building, which will remain a fixture on the landscape of ideas in Southern California.

On December 15, 2001, the Center for Inquiry-West hosted two luminaries of the publishing world. *Free Inquiry* magazine editor Tom Flynn and SKEPTICAL INQUIRER editor Kendrick Frazier visited Los Angeles from New York and New Mexico, respectively, for a party to launch the building. James Underdown, Executive Director of CFI-West, hosted and also spoke. After the brief presentations, the 100+ attendees stayed for music, food, and refreshments to celebrate the occasion.

UFOs Over Hollywood

A production company working for the British Broadcasting Corporation spent the day at the Center for Inquiry–West in early December to do a piece on UFO belief in Hollywood. As a part of their story, At It Productions wanted to see how difficult it would be to fake a UFO photo.

It turns out that it's not difficult at all. Three members of CFI–West's *Independent Investigations Group* used a coffee pot lid, some invisible string, and a $9 disposable camera to capture the accompanying pictures. They were taken from (and made on) the roof of the new CFI–West building in Hollywood. The 35mm camera needed no alteration to chronicle the Mr. Coffee That Almost Ate Hollywood. (Thanks to Milt Timmons and Bob Gelfand of the IIG for their help.)

—James Underdown

James Underdown is Executive Director for the Center for Inquiry–West.

Recent Deaths

Thomas A. Sebeok, CSICOP Fellow and professor of anthropology, linguistics, and semiotics at Indiana University from 1943 to 1991, a prolific author (*Animal Communication, Speaking of Apes* are among his sixty books) who debunked theories that apes and chimpanzees could learn and communicate in human language, pioneer of the field of semiotics, of leukemia, at the age of 81, at his home in Bloomington, Indiana, on December 21, 2001.

Grover Krantz, controversial Washington State University anthropologist who became strongly identified with attempts to find scientific evidence of Bigfoot or sasquatch, author of several books on the subject and advocate of bringing forensic techniques to the study of these still-undiscovered bipedal creatures, of pancreatic cancer at his home in Port Townsend, Washington, on February 14, 2002, at the age of 71. □

Benny Hinn: Healer or Hypnotist?

Benny Hinn tours the world with his "Miracle Crusade," drawing thousands to each service, with many hoping for a healing of body, mind, or spirit. A significant number seem rewarded and are brought onstage to pour out tearful testimonials. Then, seemingly by the Holy Spirit, they are knocked down at a mere touch or gesture from the charismatic evangelist. Although I had seen clips of Hinn's services on television, I decided to attend and witness his performance live when his crusade came to Buffalo, New York, last June 28–29. Donning a suitable garb and sporting a cane (left over from a 1997 accident in Spain), I limped into my seat at the HSBC Arena, downtown.

Learning the Ropes

Benny Hinn was born in 1953, the son of an Armenian mother and Greek father. He grew up in Jaffa, Israel, "in a Greek Orthodox home" but was "taught by nuns at a Catholic school" (Hinn 1999, 8). Following the Six-Day War in 1967, he emigrated to Canada with his family. When he was nineteen he became a born-again Christian. Nearly two years later, in December 1973, he traveled by charter bus from Toronto to Pittsburgh to attend a "miracle service" by Pentecostal faith-healing evangelist Kathryn Kuhlman (1907–1976). At that service he had a profound religious experience, and that very night he was pulled from bed and "began to shake and vibrate all over" with the Holy Spirit (Hinn 1999, 8–14).

Joe Nickell is CSICOP's Senior Research Fellow and author of numerous investigative books.

Before long Hinn began to conduct services sponsored by the Kathryn Kuhlman Foundation. Kuhlman died before Hinn could meet her personally but her influence on him was profound, as he acknowledged in a book, *Kathryn Kuhlman: Her Spiritual Legacy and Its Impact on My Life* (Hinn 1999). Eventually he began preaching elsewhere, including the Full Gospel Tabernacle in Orchard Park, New York (near Buffalo) and later at a church in Orlando, Florida. By 1990 he was receiving national prominence from his book *Good Morning, Holy Spirit*, and in 1999 he moved his ministry headquarters to Dallas.

Lacking any biblical or other theological training, Hinn was soon criticized by other Christian ministries. One, Personal Freedom Outreach, labeled his teachings a "theological quagmire emanating from biblical misinterpretation and extra-biblical 'revelation knowledge.'" He admitted to *Christianity Today* magazine that he had erred theologically and vowed to make changes (Frame 1991), but he has continued to remain controversial. Nevertheless, according to a minister friend, "Outside of the Billy Graham crusade, he probably draws the largest crowd of any evangelist in America today" (Condren 2001).

Hinn's mentor, Kathryn Kuhlman, who performed in flowing white garments trimmed with gold (Spraggett 1971, 16), was apparently the inspiration for Hinn's trademark white suits and gold jewelry. From her he obviously learned the clever "shotgun" technique of faith-healing (also practiced by Pat Robertson and others). This involves announcing to an audience that certain healings are taking place, without specifying just who is being favored (Randi 1987, 228–229).

Selection Process

In employing this technique, Hinn first sets the stage with mood music, leading the audience (as did Kuhlman) in a gentle rendering of

> He touched me, oh, He touched me,
> And, oh, the joy that filled my soul!
> Something happened and now I know
> He touched me, and made me whole. . . .

Spraggett (1971, 17) says that with Kuhlman, as it was sung over and over, it became "a chant, an incantation, hypnotic in its effect," and the same is true of Hinn's approach.

In time, the evangelist announces that miracles are taking place. At the service I attended, he declared that someone was being "healed of witchcraft"; others were having the "demon of suicide" driven

out; still others were being cured of cancer. He named various diseases and conditions that were supposedly being alleviated and mentioned different areas of the anatomy—a back, a leg, etc.—that he claimed were being healed. He even stated that he need not name every disease or body part, that God's power was effecting a multitude of cures all over the arena.

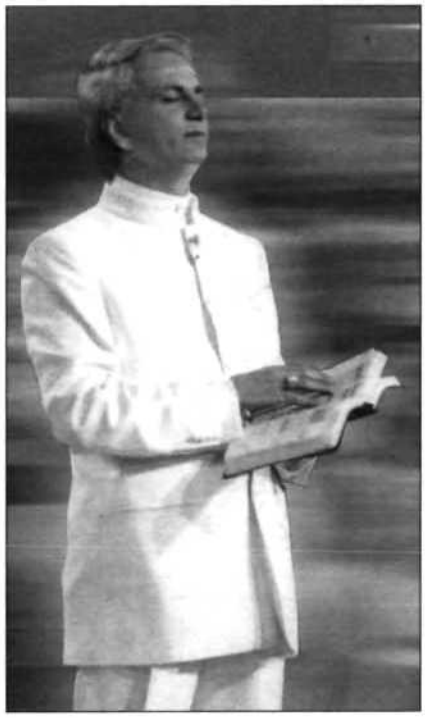
Thus, instead of the afflicted being invited up *to be* healed (with no guarantee of success), the "shotgun" method encourages receptive, emotional individuals to believe they *are* healed. Only that self-selected group is invited to come forward and testify to their supposedly miraculous transformation. While I remained seated (seeing no investigative purpose to making a false testimonial), others are more tragically left behind. At one Hinn service a woman—hearing the evangelist's anonymously directed command to "stand up out of that wheelchair!"—struggled to do so for almost half an hour before finally sinking back, exhausted (Thomas 2001).

There is even a further step in the selection process: Of those who do make it down the aisles, only a very few will actually be invited on stage. They must first undergo what amounts to an audition for the privilege. Those who tell the most interesting stories and show the greatest enthusiasm are the ones likely to be chosen (Underdown 2001).

This selection process is—perhaps not surprisingly—virtually identical to that employed by professional stage hypnotists. According to Robert A. Baker, in his definitive book, *They Call It Hypnosis* (1990, 138–139):

> Stage hypnotists, like successful trial lawyers, have long known their most important task is to carefully pick their subjects—for the stage as for a jury—if they expect to win. Compliance is highly desirable, and to determine this ahead of time, the stage magician will usually give several test suggestions to those who volunteer to come up on the stage. Typically, he may ask the volunteers to clasp their hands together tightly and then suggest that the hands are stuck together so that they can't pull them apart. The stage hypnotist selects the candidates who go along with the suggestion and cannot get their hands apart until he tells them, "Now, it's okay to relax and separate them." If he has too many candidates from the first test, he may then give them a second test by suggesting they cannot open their mouths, move a limb, or open their eyes after closing them. Those volunteers who fail one or more of the tests are sent back to their seats, and those who pass all the tests are kept for the demonstration. Needless to say, not only are they compliant, cooperative, and suggestible, but most have already made up their minds in volunteering to help out and do exactly as they are told.

Hinn's selection process is—perhaps not surprisingly—virtually identical to that employed by professional stage hypnotists.



Benny Hinn

Role-playing

Once on stage, one of Hinn's screeners announces each "healed" person in turn, giving a quick summary of the alleged miracle. At the service I attended, one woman put on a show of jumping up and down to demonstrate that she was free of pain following knee surgery three weeks before. Another was cured of "depression," caused by "the demon," said a screener, that resulted from "an abusive relationship with her husband." Still another (who admitted to being "an emotional person") said her sister-in-law sitting beside her had begun to "speak in tongues" and that she herself felt she was healed of various ailments, including high blood pressure and marital trouble. At her mention of her brother, Hinn brought him up and learned he had been healed of "sixteen demons" two years previously, and expected to be cured of diabetes; Hinn prayed for God to "set him free" of the disease. Another was supposedly cured of being "afraid of the Lord" (although he was carrying the bible of a friend who had died of AIDS), and one woman stated she believed she had just been cured of ovarian cancer.

In each instance—after the person has given a little performance (running about, offering a sobbing testimonial, etc.), and Hinn has responded with some mini-sermon, prayer, or other reaction—the next step in the role-playing is acted out. As one of his official catchers moves into place behind the person, Hinn gives a gesture, touch, or other signal. Most often, while squeezing the person's face between thumb and finger, he gives a little push, and down the compliant individual goes. Some slump; some stiffen and fall backward; a few reel. Once down, many lie as if entranced, while others writhe and seem almost possessed.

Along with speaking or praying in tongues (glossolalia) and other emotional expressions, this phenomenon of "going under the Power" is a characteristic of the modern charismatic movement (after the Greek *charisma*, "gift"). Also known as being "slain in the Spirit," it is often regarded skeptically even by other Christians who suspect—correctly—that the individuals involved are merely "predisposed to fall" (Benny

Hinn: Pros & Cons 2002). That is, they merely engage in a form of role-playing that is prompted by their strong desire to receive divine power as well as by the influence of suggestion that they do so. Even the less emotionally suggestible people will be unwilling *not* to comply when those around them expect it.

In short, they behave just as if "hypnotized." Although popularly believed to involve a mystical "trance" state, hypnosis is in fact just compliant behavior in response to suggestions (Baker 1990, 286). One professional hypnotist said of Hinn's performance: "This is something we do every day and Mr. Hinn is a real professional" (Thomas 2001).

One professional hypnotist said of Hinn's performance: "This is something we do every day and Mr. Hinn is a real professional."

Cures?

But what about the healings? Do faith-healers like Benny Hinn really help nudge God to work miracle cures? In fact, such claims are invariably based on negative evidence—"we don't know what caused the illness to abate, so it must have been supernatural"—and so represent the logical fallacy called "arguing from ignorance." In fact, as I explained to a reporter from *The Buffalo News* following a Benny Hinn service, people may feel they are healed due to several factors. In addition to the body's own natural healing mechanisms, there is the fact that some serious ailments, including certain types of cancer, are unpredictable and may undergo "spontaneous remission"—that is, may abate for a time or go away entirely. Other factors include even misdiagnosis (such as that of a supposedly "inoperable, malignant brain-stem tumor" that was actually due to a faulty CT scan [Randi 1987, 291–292]).

And then there are the powerful effects of suggestion. Not only psychosomatic illnesses (of which there is an impressive variety) but also those with distinct physical causes may respond to a greater or lesser degree to "mental medicine." Pain is especially responsive to suggestion. In the excitement of an evangelical revival, the reduction of pain due to the release of endorphins (pain-killing substances produced by the body) often causes people to believe and act as if they have been miraculously healed (Condren 2001; Nickell 1993; Nolen 1974).

Critical studies are illuminating. Dr. William A. Nolen, in his book *Healing: A Doctor in Search of a Miracle* (1974), followed up on several reported cases of healing from a Kathryn Kuhlman service but found no miracles—only remissions, psychosomatic diseases, and other explanations, including the power of suggestion.

More recently a study was conducted following a Benny Hinn crusade in Portland, Oregon, where seventy-six miracles were alleged. For an HBO television special, *A Question of Miracles* (Thomas 2001), Benny Hinn Ministries was asked to supply the names of as many of these as possible for investigation. After thirteen weeks, just five names were provided. Each case was followed for one year.

The first involved a grandmother who stated she had had "seven broken vertebras" but that the Lord had healed her at the evening service in Portland. In fact, x-rays afterward revealed otherwise, although the woman felt her pain had lessened.

The second case was that of a man who had suffered a logging accident ten years previously. He demonstrated improved mobility at the crusade, but his condition afterward deteriorated and "movement became so painful he could no longer dress himself." Yet he remained convinced he was healed and refused the medication and surgery his doctors insisted was necessary.

The next individual was a lady who, for fifty years, had only "thirty percent of her hearing" as claimed at the Portland crusade. However, her physician stated, "I do not think this was a miracle in any sense." He reported that the woman had had only a "very mild hearing loss" just two years before and that she had made "a normal recovery."

The fourth case was that of a girl who had not been "getting enough oxygen" but who claimed to have been healed at Hinn's service. In fact, since the crusade she "continued to suffer breathlessness," yet her mother was so convinced that a miracle had occurred that she did not continue to have her daughter seek medical care.

Finally, there was what the crusade billed as "a walking dead woman." She had had cancer throughout both lungs, but her doctors were now "overwhelmed" that she was "still alive and still breathing." Actually, her oncologist rejected all such claims, saying the woman had an "unpredictable form of cancer that was stable at the time of the crusade." Tragically, her condition subsequently deteriorated and she died just nine months afterward.

What Harm?

As these cases demonstrate, there is a danger that people who believe themselves cured will forsake medical assistance that could bring them relief or even save their lives. Dr. Nolen (1974, 97–99) relates the tragic case of Mrs. Helen Sullivan who suffered from cancer that had spread to her vertebrae. Kathryn Kuhlman had her get out of her wheelchair, remove her back brace, and run across the stage repeatedly. The crowd applauded what they thought was a miracle, but the antics cost Mrs. Sullivan a collapsed vertebra. Four months after her "cure," she died.

Nolen (1974, 101) stated he did not think Miss Kuhlman a deliberate charlatan. She was, he said, ignorant of diseases and the effects of suggestion. But he suspected she had "trained herself to deny, emotionally and intellectually, anything that might threaten the validity of her ministry." The same may apply to Benny Hinn. One expert in mental states, Michael A. Persinger, a neuroscientist, suggests people like Hinn have fantasy-

prone personalities (Thomas 2001). Indeed, the backgrounds of both Kuhlman and Hinn reveal many traits associated with fantasy-proneness, but it *must be noted that being fantasy prone* does not preclude also being deceptive and manipulative.

Hinn notes that only rarely does he lay hands on someone for healing, but he made an exception for one child whose case was being filmed for the HBO documentary. The boy was blind and dying from a brain tumor. "The Lord's going to touch you," Hinn promised. The child's parents believed and, although not wealthy, pledged $100 per month to the Benny Hinn Ministries. Subsequently, however, the child died.

Critics, like the Rev. Joseph C. Hough, President of New York's Union Theological Seminary, say of the desperately hopeful: "It breaks your heart to know that they are being deceived, because they genuinely are hoping and believing. And they'll leave there thinking that if they didn't get a miracle it's because they didn't believe." More pointedly, Rabbi Harold S. Kushner stated on *A Question of Miracles* (Thomas 2001):

> I hope there is a special place in Hell for people who try and enrich themselves on the suffering of others. To tantalize the blind, the lame, the dying, the afflicted, the terminally ill, to dangle hope before parents of a severely afflicted child, is an indescribably cruel thing to do, and to do it in the name of God, to do it in the name of religion, I think, is unforgivable.

Amen.

Acknowledgments

I am grateful to George E. Abaunza, Professor of Philosophy at Felician College in Lodi, N.J., for sending me a copy of the video *A Question of Miracles*. I also appreciate the input of Jim Underdown and other members of the Center for Inquiry–West's Independent Investigations Group who attended a Benny Hinn Miracle Crusade in Anaheim, California, August 17, 2001. Thanks are also due to Tim Binga for research assistance, Ranjit Sandhu for typing the manuscript, and Robert A. Baker for reading it.

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Djinn Engine Solves the Energy Crisis

Move over, Creation Science. There is a new kid on the block seeking to replace you: Islamic Science. Like its Christian counterpart, Islamic Science seeks to apply the principles embedded in purportedly divinely inspired religious texts to advance our understanding of the physical world. In an article in *Al-Serat*, a journal of Islamic studies published by the Muhammadi Trust of Great Britain and Northern Ireland (Vol. IX, No. I), Yahya Cooper laments that "the Muslim has taken to neglecting his own scientific tradition. The campaign of Western science has been largely successful in suppressing competition not only in the West but also elsewhere, perhaps nowhere more successfully than in the Muslim world. In which universities in Muslim countries, or anywhere else, are the Islamic sciences practiced, not as a historical discipline, but as 'living' sciences?" (See www.al-islam.org/al-serat/default.asp?url=science.htm.)

One factor holding it back is "the idea that since Aristotelian science has been the foundation of the "Islamic sciences," it is necessary for anyone who wishes to pursue the tradition to accept the Aristotelian system as a dogma, but we have tried to show that this is a mistake. There is nothing dogmatic about the Aristotelian system; it is chosen because of its great affinity to the idea of *tawhid* [oneness]. It must therefore be, and is, open to examination, and if it is found to be unsatisfactory as a principle of knowledge, appropriate steps should be taken to rectify the situation."

What kind of experiments might be attempted by a good Aristotelian Islamic scientist: the transmutation of Earth into Fire?

Spoken like a good empiricist, although scientists in the Western world found Aristotle's speculations to be "unsatisfactory as a principle of knowledge" about 400 years ago. "We do not wish in any sense to imply that there is something wrong with the Aristotelian world view, and it seems that there is good reason to suppose that many of the criticisms directed at it in the West are not founded on the "rational" principles that have been claimed to support these criticisms. However, this matter is an area of research which has scarcely been opened up, and is one which should engage the attention of any true, dare we say, Islamic philosopher. When such a study is undertaken, proper attention will have to be paid to the reasons for which this Aristotelian system has proved so attractive to Muslim thinkers, but the belief that such a system is intrinsically 'inferior' should be rejected at the beginning."

Surely whether or not the Aristotelian system is "inferior" is a question open to experiment. However, one wonders what kind of experiments might be attempted by a good Aristotelian Islamic scientist: the transmutation of Earth into Fire?

One man who apparently has no hesitation about putting the principles of Islamic Science into practice is Sultan Bashir Mohammed (sometimes spelled "Mahmood" or "Memhood"), a nuclear scientist who reportedly had been detained in Pakistan for investigation of his links to terrorist organizations. According to a story in the *Times of India*, SBM (as he is known to his followers) "is a believer in djinns, described in the Holy Koran as beings made of fire. A proponent of 'Islamic science,' he has written papers suggesting that these entities could be tapped to solve the energy crisis. He has also spoken about the possibility of developing souls and communicating with them" (www.timesofindia.com/articleshow.asp?art_id=37865728). SBM has also claimed that sunspots play a major role in determining human behavior and history.

After establishing a solid reputation in conventional science, SBM "is believed to have turned to 'Islamic science' in the 1980s, delving into the Holy Koran, which he believes to be a fount of knowledge. He came up with

Robert Sheaffer's World Wide Web page for UFOs and other skeptical subjects is at www.debunker.com.

unusual theories to bring together physics and metaphysics. Some of the ideas were spelt out in a volume titled *The Mechanics of Doomsday and Life After Death.* He later established the Holy Koran Foundation to explore the scientific dimension of the book."

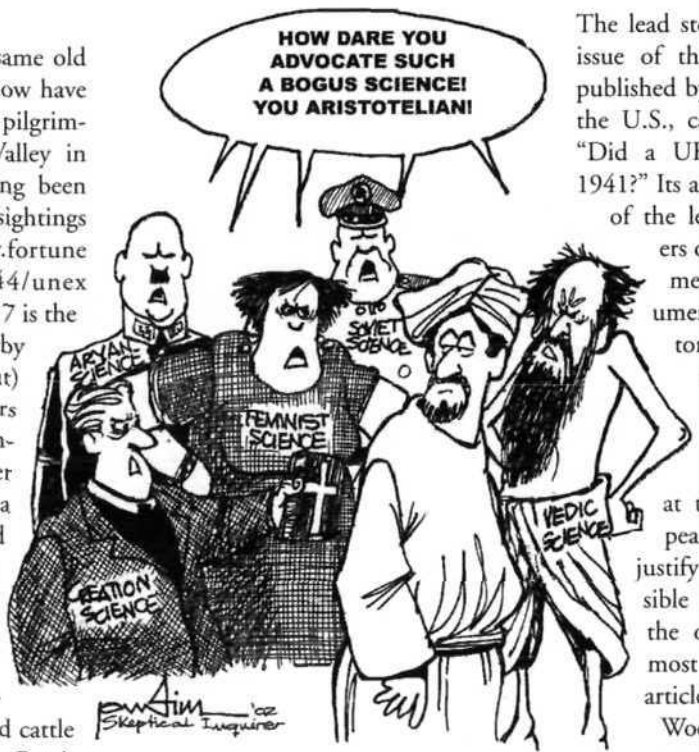
Islamic Science now seems ready to join the ranks of Creation Science, Aryan Science, Soviet Science, Vedic Science, and Feminist Science as contentious alternatives to just plain, universal "science." As soon as any of these ideologically based disciplines succeeds in doing something significant that ordinary science has not, we'll all sit up and take it seriously. Until then, we're justified in presuming them to be nonsense.

* * *

UFO tourists who tire of the same old trips to Roswell and Area 51 now have another destination for their pilgrimages. The remote San Luis Valley in south-central Colorado has long been reputed as a place where UFO sightings are commonplace (see www.fortunecity.com/marina/strand/2044/unexplained.html). Along highway 17 is the tiny town of Hooper, and nearby is the TLC (Terrestrial Lookout) Ranch, where UFO watchers congregate (see www.ufowatchtower.com/). The UFO Center has been in operation for over a year, and has been pronounced "a success" by its owner Judy Messoline. She says that she bought the property six years ago to raise Scotch-Highland cattle, bravely defying the supposedly high rate of unexplained cattle mutilations reported in the area. But it wasn't alien activity that put her out of the cattle business, just the high cost of providing the animals' food and water, so she is now in the full-time UFO business. Persons hoping for their very own close encounter can stay in the campground and look skyward. The highlight of the site is the ten-foot-high UFO Watchtower, which boasts of panoramic views of the 7,500-foot-elevation valley where "unexplained" encounters are reported to occur. The ranch also contains a saucer-shaped gift shop, which carries all manner of UFO-related souvenirs including jackets, T-shirts, San Luis Alien Dust, and other extraterrestrial stuff. Admission to the UFO Watchtower is $1.

Many of the sightings reported from this region sound very much like satellite passes and meteors. When folks with little knowledge of astronomy come to an extremely dark and remote site like this and start looking skyward, they will notice all kinds of things that they had never seen before. Tower-watchers have reported seeing lights flash and hover, then disappear in about an hour—very likely stars or planets. Others have come there to tell their stories of being "abducted." If you want to check the phenomena out for yourself, the "First Annual UFO Watch" will be held June 10–12 at this site. Following close on its heels will be the "Metaphysical Music Festival" on June 21–22. (A tinny version of the *Close Encounters* movie theme is looped loudly and annoyingly on the UFO Watchtower's Web site—let's hope that the music festival will sound better than this!)

When folks with little knowledge of astronomy come to an extremely dark and remote site and start looking skyward, they will notice all kinds of things that they had never seen before.



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The lead story in the November 2001 issue of the *MUFON UFO Journal,* published by the largest UFO group in the U.S., carries the provocative title: "Did a UFO Crash in Missouri in 1941?" Its author is Ryan S. Wood, one of the leading investigators/promoters of the "Son of MJ-12 Documents" (see www.majesticdocuments.com). The journal's editor, Dwight Connelly, warns that Wood's account "is only a tantalizing possibility, not a proven fact." However, "in looking at the total picture, there appears to be enough evidence to justify continued research on possible UFO crashes" other than the one at Roswell, which for most MUFON members is an article of faith.

Wood explains how the official government coverup of a UFO that crashed in the spring of 1941 just outside Cape Girardeau, Missouri, a town along the Mississippi River, began to leak when the family of the Baptist minister brought in to pray for the dead aliens recently began to spill the beans. According to Charlette Mann, whose grandfather the Reverend William Huffman had allegedly been brought in to pray for the aliens' souls (or whatever it is that alien humanoids may have), she learned from her grandmother how grandpa had been called out one fine

spring evening in 1941 around 9 o'clock, ostensibly to minister to victims of a plane crash. But when he got there, he allegedly saw a craft that was not from this world, with three dead bodies of short aliens scattered about. "They were covered head to foot in what looked like wrinkled aluminum foil. He could see no hair on the bodies and they had no ears. They were small framed like a child, about four feet tall, but had larger heads and longer arms than a human child. They had very large oval shaped eyes, no noses just holes, no lips with a small slit for a mouth," she said. "My grandfather, upon arrival, said there were already several people there on the scene, two that he assumed were local photographers, fire people," according to Ms. Mann, "and not so long after they arrived, the military just showed up, surrounded the area, took them off in groups separately, and spoke to each of them. Grandfather didn't know what was said to the others, but he was told 'this didn't happen; you didn't see this; this is national security; it is never to be talked about again'." Other witnesses are said to have confirmed this account, but are unfortunately nowhere to be found. Philip J. Klass, in his *Skeptics UFO Newsletter* #70, gives us one piece of information that may help in judging Ms. Mann's credibility: her business card reads "Spiritual Counselor, Meditation Instructor, Past Life Regression."

According to Wood, the best evidence in support of the UFO that supposedly crashed more than six months before Pearl Harbor is their supposed confirmation in the second round of MJ-12 documents (which of course proves nothing more than that the document hoaxer was aware of what UFO stories were being told). One alleged document discusses the creation of the Interplanetary Phenomena Unit (IPU), and tells of two more saucer crash retrievals. One was in the San Bernardino Mountains, east of Los Angeles, and the second was offshore from the southern California coast, possibly shot down by anti-aircraft fire.

There may have been more UFO crashes in Missouri, as well, which would make it an even more dangerous flyover state than New Mexico for UFO pilots. A shop called "The Crystal Ball" in Shorewood, Wisconsin, is selling alleged "1947 Missouri Crash Site Debris." The event supposedly took place in "July 1947 about the same time as the Roswell incident took place." They admit that their account of the crash story is third or fourth-hand. However, interested parties are invited to purchase pieces of metallic slag that may or may not be fragments of extraterrestrial craft, at prices ranging from $250 to $3,490, plus shipping and handling (see www.wehug.com/crashsitedebris.html). □

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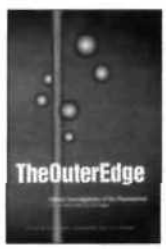

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A Pterodactyl in the Civil War

Most people know about the plot of *Jurassic Park*, the Steven Spielberg movie inspired by the Michael Crichton best-seller: dinosaurs are brought back to life thanks to the wonders of genetic engineering. The dinosaurs were so real that the movie instantly became a huge success. It was obvious that a new Crichton book and subsequent Spielberg movie, *The Lost World*, would be produced. Again a fantastic success and more sequels to come (though with Crichton and Spielberg still more or less involved, but not in the limelight anymore).

Lost World

Not many, however, know that the original idea for dinosaurs still living in the modern era and interacting with humans dates back to 1912 when Arthur Conan Doyle, then already a worldwide celebrity thanks to the adventures of his cool private detective Sherlock Holmes, published one of his most famous novels, *The Lost World*. It was not a coincidence—nor a theft—but a tribute to the old master, then, that Crichton would give the same title to his own book.

In Doyle's book, a group of explorers, led by the energetic Professor Challenger, sets sails for a lost land in South America (a place where Crichton would stage his stories as well) and discovers that dinosaurs, long believed to be extinct, still live. The group survives a million adventures and then is able to make it back to London. At a public lecture at Queen's Hall they try to convince a skeptical audience of the wonders they witnessed but words, drawings, and fuzzy pictures are not enough. The only thing that could have an effect would be the presence of a real creature.

And the creature is there: "[A] large square packing-case was slowly carried forward and placed in front of the Professor's chair. All sound had hushed in the audience and everyone was absorbed in the spectacle before them. Professor Challenger drew off the top of the case, which formed a sliding lid. Peering down into the box he snapped his fingers several times and was heard from the Press seat to say, 'Come, then, pretty, pretty!' in a coaxing voice. An instant later, with a scratching, rattling sound, a most horrible and loathsome creature appeared from below and perched itself upon the side of the case. The face of the creature was like the wildest gargoyle that the imagination of a mad medieval builder could have conceived. It was malicious, horrible, with two small red eyes as bright as points of burning coal. Its long, savage mouth, which was held half-open, was full of a double row of shark-like teeth. Its shoulders were humped, and round them were draped what appeared to be a faded gray shawl. It was the devil of our childhood in person."

Lost Creatures

That's the description of a pterodactyl, the ancient prehistoric winged reptile that lived between 144 and 65 million years ago. When Doyle wrote his book, dinosaurs and pterodactyls were of course long gone. Imagine how fantastic it would

Massimo Polidoro is an investigator of the paranormal, author, lecturer, and co-founder and head of CICAP, the Italian skeptics group. He was profiled in "Introducing Italy's Version of Harry Houdini" in the March/April 2001 SKEPTICAL INQUIRER. He is a CSICOP Fellow. This is the first of a new series of SI columns by him.

be if, somewhere, somehow, some dinosaur were still alive; that's exactly what many believe the Loch Ness or the Ogopogo "monsters" are, or what other mysterious creatures could be. Animals that lived when dinosaurs roamed are still with us and will probably still be here for a long time, such as sharks, crocodiles, and turtles, for example.

Yes, you'd say, but there's a huge difference between a lone, mysterious, gigantic creature that is said to live in a lake—but of which nobody seems to be able to take a decent picture—and animals that any school kid can meet at an aquarium. Okay, one could answer, but what do you say about the fact that prehistoric creatures that were thought to be extinct are still found to be alive? That's what happened with the coelacanth, for example, of which a living specimen was discovered only in 1952. And, surprisingly, "new" animals can still be found in our small world: animals such as the okapi, the Komodo dragon, the mountain gorilla, the Manchurian brown bear, or the giant panda, were all discovered only in the twentieth century. Even to this day, huge and unexpected new creatures can be found: What would you call, in fact, the chance filming by an underwater expedition in May 2001 of a big, strange-looking, and never-seen-before squid (more than seventeen feet long)? (Vecchione et al. 2001)

Now, you'd probably admit that the possibility of finding an unexpected "dinosaur," or at least some creature that lived millions of years ago, appears to be more plausible. But, would you be ready to stretch your willingness to the point of imagining a real, living pterodactyl, flying through North America? Some people did.

Lost Picture

It all began in April 26, 1890, when the *Tombstone Epitaph*, an Arizona local newspaper, published a sensational story: "Found in the Desert—A Strange Winged Monster Discovered And Killed On The Huachuca Desert." In it the monster was described as "a huge alligator with an extremely elongated tail and an immense pair of wings." The monster had been sighted and shot by two ranchers who were returning home from the Huachuca Desert. When the creature was certainly dead, they proceeded to make an examination and "found that it measured about ninety-two feet in length and the greatest diameter was about fifty inches." The wingspan, "from tip to tip," was about 160 feet. The wings, as in the pterodactyl, were "composed of a thick and nearly transparent membrane and were devoid of feathers or hair, as was the entire body."

In the spring of 2000 a new Web site published a sensational photograph showing a group of what appeared to be Union soldiers before the carcass of a massive pterodactyl!

Unfortunately, according to the story, the two cowboys left the monster where it was and only cut off a small portion of the tip of one wing as a souvenir. A search, however, was to be sent next day "for examination by the eminent scientists of the day." No trace of the bird or of the commission's report however has ever appeared. Harry McClure, a youngster early last century in Lordsburg, New Mexico, when the two ranchers came to town, remembered the episode. He had friends who knew them well and thought the story was not a hoax. Was the creature photographed? No, it was not, according to McClure, and in any case the *Epitaph* did not carry any pictures with its article.

Others, however, think differently. Writer Jack Pearl told about the *Epitaph* story in a 1963 issue of *Saga Magazine* and explained that the strange bird was brought to town and photographed. It was put in a wagon and, after reaching Tombstone, was nailed to the wall of a barn: six men stood before it with their arms outstretched touching fingertip to fingertip. Pearl, however, seems to have gotten many details wrong, as Mark Hall clearly explained in *Fortean Times* magazine, and the story of the picture has never received any corroboration. There were many, though, who remembered seeing such a photograph, or a photocopy of it, in the hands of Ivan T. Sanderson, the famous naturalist and Fortean author who died in 1973. Apparently, Sanderson gave the photocopy to two young men who travelled into the heart of northern Pennsylvania to inquire about reports of giant birds in that region and lost it in the course of their search. All kinds of publications were searched, from *National Geographic* to *Fate* magazine, including all the back issues of the *Epitaph*, but no traces of such a photo were ever found.

"The numerous vague recollections of seeing this missing photograph," concludes Hall in his article, "might well be erroneous. Like many others, I have spent many hours looking for it and like them I will continue to look. Everyone who reads about this phantom photograph has the same desire to see it for themselves." And then, after many years, a mysterious picture emerges from the Internet.

Lost Chance

In the spring of 2000 a new Web site (www.freakylinks.com) appeared and published a sensational photograph, here reproduced, showing a group of what appeared to be Union soldiers before the carcass of a massive pterodactyl! The editor of the site, Derek Barnes, claimed that the photo was found in July of 1998 "squeezed between the pages of a 70's cheesy paranormal book bought at a thrift store." The photograph, sepia tinted, scratched, bent, and torn on the edges, appeared to be very impressive and, apparently, its authenticity was verified by various experts. One historian had identified the men's uniforms as "typical of Union Volunteers around

1861–1862." Another expert, an "M. Nance Darbrow, professor of paleontology from the University of Florida," asserted that no one at that time could have known about pterodactyls, as the first fossils were not discovered in North America until 1871. "This photograph," commented Barnes in his Web pages, "is either going to be the biggest paranormal news scoop of the century or it's going to make me the biggest fool on the planet. Or perhaps both."

Was, then, the holy grail of cryptozoology located at last? Alright, it did not have the cowboys standing before the bird but civil war soldiers instead. Was it perhaps a different pterodactyl? *Fortean Times* ran a very skeptical article about this photo in its May 2000 issue, concluding with these words: "We believe he's a hoaxer but a clever and well-informed one as the site is full of excellent fortean jokes—e.g., the rather disgusting photo of a toilet bowl thoughtfully snapped after some unfortunate had just vomited frogs."

Further doubts soon emerged after the magazine's article was published. Various readers wrote to pinpoint several details in the photo that led to the conclusion that the photo was a fake. First of all, the men pictured were obviously re-enactors, "given the undue proportion of over-age and overweight members in their ranks—the average Civil War soldier was a scrawny youth of nineteen." Such groups of re-enactors are quite common in the States and, among them "there is a much higher proportion of older and fatter members than in the original armies." The clean and neat uniforms "also mark them out as re-enactors rather than the real thing." Their poses, also, are "too naturalistic for an 1860s photograph"; if you've ever looked at photos from that period "you can see there are a dozen subtle differences in the way they stood, the way they held their heads, the looks on their faces, and what they did with their arms and hands while they were being photographed."

Finally, all doubts were confirmed when it was discovered that the site was connected to the creators of *The Blair Witch Project*. *FreakyLinks* was in fact the title of an upcoming TV series, and the site was designed to promote interest in it. The show star was actor Ethan Embry and his character was named "Derek Barnes, Editor of an Internet Web site that investigates the paranormal." As expected, the experts quoted in the site were imaginary, just as the pterodactyl that was only a stage prop courtesy of Fox. The cryptozoologists' hope of having finally found real proof of a living pterodactyl in the modern era, then, returned to the world of dreams. But if somewhere an unknown magazine or book truly contains an old picture of a mysterious bird, it will hopefully be found some day.

Doubts soon emerged after the magazine's article was published. Various readers wrote to pinpoint several details in the photo that led to the conclusion that the photo was a fake.

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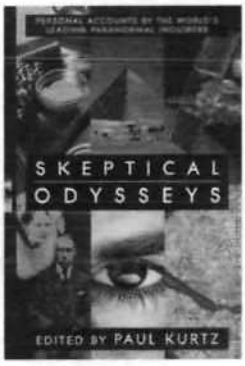

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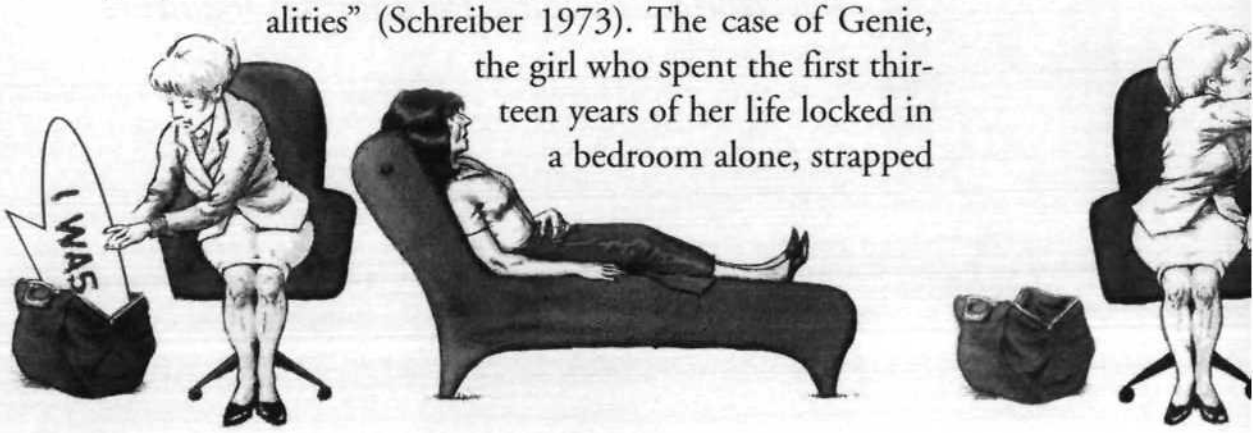
Who Abused Jane Doe?
The Hazards of the Single Case History
Part 1

Case histories have played a long-standing role in the history of science, medicine, and mental health. But they can mislead—especially when only half the story is told. Here's a case history about a case history that proves just that.

ELIZABETH F. LOFTUS and MELVIN J. GUYER

Case histories have a long and cherished tradition in science. They are compelling anecdotes, often powerful enough to generate entire theories of behavior. Freud built the edifice of psychoanalytic theory on the very few cases he saw in therapy. Bruno Bettelheim used a few cases of autistic children to conclude that autism is caused by "refrigerator" mothers (Pollak 1997). Psychiatrist Cornelia Wilbur's account of her patient, "Sybil," captivated millions of people who believed the story of Sybil's "multiple personalities" (Schreiber 1973). The case of Genie, the girl who spent the first thirteen years of her life locked in a bedroom alone, strapped



to a potty chair, with minimal stimulation apart from being continually beaten, was thought to tell us a great deal about language acquisition (Curtiss 1977). John Money told the world of a boy who lost his penis at the age of seven months, and who then received plastic surgery at twenty-one months to reassign him as a girl. Money followed this girl until the age of nine; although she had many "tomboyish" behaviors, she also had a female gender identity. Money concluded from this case study and from his research with more than 100 other 'intersex' children that sexual identity is more strongly influenced by socialization than by biology.

Some case studies offer a window into human nature and physiology that would otherwise be shut. Oliver Sacks's stories of his patients' rare medical conditions reveal not only the mysteries of the brain but also those of personality (Sacks 1990). Case studies have identified some of the complex specialties of cells in the visual system: For example, one man with localized brain damage was able to recognize a face made up entirely of vegetables, but he could not recognize the component vegetables themselves (Moscovitch, Winocur, and Behrmann 1997). The sad case of the man known only as H. M., much of whose hippocampus and adjacent cortex were surgically removed in 1953, taught his investigators a great deal about the physiology of memory, for H. M. could not form new memories of events that happened to him after his operation (Ogden and Corkin, 1991). Similarly, case studies in clinical psychology can refute misguided generalizations, such as that mentally retarded people lack the cognitive ability to develop obsessive-compulsive disorder, or that *taijin-kyofu-sho* (fear of other people, abbreviated TKS) is a culture-bound disorder confined to Japan (McNally and Calamari 1989; McNally, Cassiday, and Calamari 1990). Case studies like these can provide compelling refutations to assumptions about "universal" aspects of human behavior.

But case studies, by definition, are bounded by the perceptions and interpretations of the storyteller. If they are well told—and Freud, Bettelheim, Wilbur, and Money could tell a story well—readers often find them far more persuasive and compelling than the stodgy numbers and cautions of science. Why would anyone question Cornelia Wilbur's account of Sybil? It was years before independent investigators learned that Wilbur's publisher thought that making Sybil a multiple personality would be more interesting—and sell more books—than telling the story of her real mental disorder, which was probably some form of hysteria (Borch-Jacobsen 1997). How many readers would ask whether the case of the boy raised as a girl was actually well adjusted, or whether the case was typical or anomalous of the many children who have had sex reassignment for various medical reasons? Subsequent investigation revealed that the particular boy, David Reimer, never adjusted well and reverted to life as a male (Colapinto

Abstract: Case histories make contributions to science and practice, but they can also be highly misleading. We illustrate with our re-examination of the case of Jane Doe; she was videotaped twice, once when she was six years old and then eleven years later when she was seventeen. During the first interview she reported sexual abuse by her mother. During the second interview she apparently forgot and then remembered the sexual abuse. Jane's case has been hailed by some as the new proof of recovery of repressed or dissociated traumatic memories, and even as proof of the reliability of recovered memories of repeated abuse. Numerous pieces of "supporting evidence" were given in the original article for believing that the abuse occurred. Upon closer scrutiny, however, there are reasons to doubt not only the "supporting evidence," but also that the sexual abuse ever happened in the first place. Our analysis raises several general questions about the use of case histories in science, medicine, and mental health. There is a cautionary tale not only for those professionals who advance the case history, but also for those who base their theories on it or would readily accept it as proof.

—The Authors

2000). But neither version of his case gives the full story because Reimer was not necessarily representative. Other case histories involving sex reassignment after ablatio penis (e.g., Bradley et al. 1998) reveal more successful adaptation. So, is it socialization or biology?

Who, at the time, dared criticize the famous Bruno Bettelheim or ask him pesky questions, such as where his control groups were (Pollak 1997)? When researchers finally did ask, they learned that parents of autistic children were no different psychologically from parents of healthy children (Markin 1997). As for Genie, there would come to pass a snarl of contradictions in reports about her, and serious questions raised about the competence of many of the scholars who wrote about her (Rymer 1993). Why did it take decades before critics were willing to expose Freud's biases in his case stories—the information he left out, the distortions of what his patients really said, his failure to consider other explanations of their symptoms and problems? (Cioffi 1998; Crews 1998; Powell and Boer 1995; Sulloway 1992; Webster 1995).

Case studies, by definition, are bounded by the perceptions and interpretations of the storyteller. If they are well told, readers often find them far more persuasive and compelling than the stodgy numbers and cautions of science.

Case studies therefore illuminate, but can also obscure, the truth. In many cases, they are inherently limited by what their reporter sees, and what their reporter leaves out. This is especially true if the writer is untrained in the scientific method, and thus unaware of the confirmation bias, the importance of considering competing explanations before making a diagnosis, and so forth. To the scientist, therefore, most case studies are useful largely to generate hypotheses to be tested, not as answers to questions. When they are offered as answers, readers should be wary. What follows is a case study of a case study—a cautionary tale.

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The Memory Wars

For more than a decade, psychological researchers and clinicians have been at war over the nature of memory. Many clinicians believe that traumatic experiences, particularly of repeated sexual brutalization, are so upsetting that they are likely to be "repressed," and can be recovered, accurately, years later—through therapy, hypnosis, dream analysis, and so forth. The extent of banishment from consciousness assumed in some definitions of repression was virtually total, as evidenced by the use of terms such as "massive repression" (Herman and Schatzow 1987, 12) or "fiercely repressed" (Courtois 1992, 23) or "total repression" (Briere 1992). (Later the term *repression* went out of fashion, and some clinicians began claiming that traumatic experiences caused dissociation, a split in consciousness, but they still mean that the trauma is completely banished from conscious awareness.)

Many academic researchers who study memory (and quite a few clinicians) have been skeptical about these notions of massive repression/dissociation. They have demonstrated repeatedly in laboratory experiments that these suggestible methods increase memory "confabulations" and errors, for example by causing people to confuse what they imagine with what actually happened. They see a lack of credible scientific support for the notion that massive repression/dissociation of repeated brutalization routinely, if ever, occurs. On the contrary, people who have survived concentration camps, systematic torture by despotic political regimes, and repeated rapes—from the victims of Serbian "ethnic cleansing" to the Korean "comfort women" of World War II—do not forget. They remember, painfully, to this day. Therefore the burden of proof has been on therapists to demonstrate the existence of this kind of repression/dissociation and confirm their belief that such traumatic memories can eventually be reliably recovered.

In 1997, psychiatrist David Corwin and his collaborator Erna Olafson published a case study that they believed provided such proof (Corwin and Olafson 1997). They told the story of a young woman they called Jane Doe, whom Corwin had first interviewed in 1984, when Jane was six years old. At the time, her biological and divorced parents were going through a tumultuous, protracted, and vicious custody dispute, and Jane was living with her mother. Jane's father and stepmother claimed that Jane's mother was sexually and physically abusing the child, and Corwin was brought in to evaluate these allegations.

From the article itself, we learn that Corwin interviewed Jane three times as a child, videotaping the interviews. In her final Corwin interview as a child, Jane told Corwin that her mother "rubs her finger up my vagina" in the bathtub, that it happened "more than twenty times . . . probably ninety-nine

times." Jane also told Corwin that her mother had physically harmed her by burning her feet (which Corwin presumed was on a stove).

Corwin concluded that Jane's mother was molesting her daughter. In addition to the child's statements, he was persuaded of the abuse because Jane seemed to him to be more relaxed with her father than with her mother. The father seemed a more reliable informant to Corwin. This was so because when the mother alleged that the father had committed tax fraud, the father proved to Corwin's satisfaction that the charge was false. However, the mother, Corwin reported, had been "convicted and jailed for fraud." Corwin thought the mother unstable, because, with three previous marriages, he wrote, the mother "had a more extensive history of marital instability than the father, who had had a long-term marriage prior to marrying Jane's mother." And, he said, Jane was consistent, in the three forensic interviews, regarding the identity of her abuser and the nature of the abuse. Her account included persuasive sensory details of what the abuse felt like; and Jane reported that her mother threatened her not to talk.

Corwin had also been persuaded that Jane had been sexually abused because of the report of a social worker who saw Jane early in 1984, after Jane allegedly told her stepmother that her mother had sexually molested her. The social worker said that Jane reported that her mother "puts her finger up my vagina in the bathtub. I don't like that. She says she can do anything she wants to me. She puts cream on my vagina. It hurts." Jane complained about being fed "cracker soup," and about nightmares. The social worker found Jane's exaggerated startle response and other symptoms to be consistent with post-traumatic stress disorder.

After Corwin's consultation and conclusion, the court ruled in the father's favor, and Jane's father and stepmother assumed custody of six-year-old Jane. The mother even lost rights of visitation.

Eleven years went by, during which Corwin continued to discuss Jane's case at conferences on memory and child abuse. In 1995, wondering what, if anything, Jane herself remembered about her experiences, he contacted Jane, now age seventeen, and she agreed to be reinterviewed on videotape. Would she have repressed the memories of her mother's abuse?

According to Corwin, she had. When asked about the past, Jane recalled: "I told the court that my mom abused me, that she burned my feet on a stove, I don't, that's really the most serious accusation against her that I remember." When Corwin asked Jane whether she remembered anything about possible sexual abuse, she said, "No. I mean, I remember that was part of the accusation, but I don't remember anything—wait a minute, yeah, I do."

> *Corwin:* What do you remember?
>
> *Jane:* Oh my gosh, that's really really weird. I accused her of taking pictures [starts to cry] of me and my brother and selling them and I accused her of—when she was bathing me or whatever, hurting me, and that's—

Jane went on to recount the sexual abuse:

> *Jane:* We were in the bathtub, and I don't have any memory, except for . . . I felt that pain. And then I remember, you know. And then it's like I took a picture, like a few seconds long, a picture of the pain, and what was inflicting the pain and then—you know, that's all the memory consists of.

Corwin regards Jane's response of remembering the pain as a "somatosensory fragment" of the sexual abuse she endured. He then showed Jane the videotapes of his interviews with her when she was six, all 2.5 hours worth. After watching the tapes, Jane said, "The little girl that I see in those videotapes I don't see as [having] made up those things, and it doesn't make sense to me that knowing the truth I would out-and-out lie like that. I have to believe that to some extent my mom did hurt me. . . ."

Most of the professionals who read about this case were persuaded that it was a full and accurate account of the story. Virtually all who saw the videotapes were deeply affected by them.

And so, watching the videotapes, Jane Doe wept, and came to remember how her mother had sexually abused her—memories, according to Corwin, that she had repressed for eleven years, a clear example of "traumatic amnesia." Although he noted some inconsistencies in Jane's version of events at age six and age seventeen, he said, "this sudden memory discovery appears to be accurate when compared to Jane's descriptions at age six of her mother's vaginal penetration of her." For Corwin, this case supports the clinical assumption that traumatic memories and ordinary memories are encoded differently: "The tears and evident strong feeling this memory discovery caused Jane were not similar, say, to suddenly remembering where one has put the car keys."

Reactions to the Case

Corwin, a member of the editorial board of the journal *Child Maltreatment,* then invited several researchers and clinicians to comment on Jane's case for an article he was preparing to publish in the journal. Some of the commentators had seen the actual videotapes of Jane at six, talking about what her mother had apparently done to her, and also at seventeen, "recovering" this memory, at conferences where Corwin told his story. Others responded to Corwin's written account, which included excerpts from the videotape transcripts of Jane at both ages.

Most of the professionals who read about this case were persuaded that it was a full and accurate account of the story. Virtually all who saw the videotapes were deeply affected by them. Paul Ekman (1997), an eminent psychologist and

expert in the field of emotion research—indeed, he is a leading expert in detecting deception from facial expressions of emotion—believed Jane's early reports of abuse: "The usually spontaneous, very rapid replies which burst forth from the six-year-old Jane," he wrote, "allow us to have confidence in the truthfulness of Jane's statements in the first interview." Ekman was also impressed by Jane's emotional expression: "Jane's emotions are genuine and expressed poignantly. Those who see the videotape are moved emotionally. I have yet to see anyone who does not have a tear in his or her eye when Jane first remembers part of what happened to her and begins to cry" (115). Ekman said he found this case to be "of extraordinary importance" (116) and urged the pursuit of other similar cases, following up children who were abused and who are now adolescents and adults.

Frank Putnam (1997), a psychiatrist, was impressed that Corwin's awareness of the risks of leading questions "permits us to accept Jane Doe's reports as truthful rather than suggested or coerced" (117). He found Jane to be "genuine and believable." Like Corwin, Putnam was impressed with the somatic components of Jane's memory of the pain, which he said is "typical of recalled traumatic moments" (118). He emphasized the "high degree of similarity" between what Jane Doe said at age six and her delayed recall at age seventeen, and felt the case "provides concrete evidence that delayed recall of traumatic childhood events does occur" (120).

Jonathan Schooler (1997), an experimental psychologist, agreed that this case supported Corwin's conclusion that "Jane's mother did in fact engage in inappropriate sexual behavior that was both invasive and painful" (126). Schooler was persuaded by the "strikingly consistent characterization of Jane's allegations across interviews with two psychological evaluators, one police investigator, her therapist, and in the three interviews with Corwin" (127). Schooler was also influenced by the "persuasive manner" in which Jane described the abuse, her "earnestness" when she described her mother's threats and abusive behavior, and "the sincerity with which she gave the Brownie Oath that she was telling the truth" (127). Schooler expressed his hope that skeptics would be persuaded by this case that individuals really can have repressed memories of "authentic incidents of abuse."

Stephen Lindsay (1997), an experimental psychologist who studies memory and children's testimony, said that the case of Jane Doe is "destined to be an extraordinarily important article." He applauded the article for being balanced and constructive. Lindsay did note that "the important question of whether Jane's childhood reports of the bathtub molestations were accurate" is something we are not in a position to know for sure. But he added that "The recollection of being digitally penetrated in the bathtub converges in its core content with the original allegations . . . is consistent with Jane's prior knowledge and beliefs, was remembered quickly and easily, and appears to have been clear and intense, all of which are consistent with the hypothesis that the recollection is essentially accurate" (189). Although Lindsay acknowledged that Jane might have been remembering the *prior allegations* rather than *actual events,* and reminded readers to maintain some uncertainty about the accuracy of the memory, he said he was inclined to believe that Jane's mother did "push her finger up Jane's vagina in a sexually abusive way." The foundation for his belief in the bathtub molestation was "somewhat shaky," he said, but he just got "the feeling that Jane experienced a powerful and essentially accurate recovered memory" (190).

Only one memory researcher, the cognitive psychologist Ulric Neisser, maintained strong skepticism. He observed that Jane's recovered memories—one of accusations that her mother took pornographic photos of her and her brother, and one of her mother's molesting her in the bathtub—were far from accurate. The memory of the photos was "entirely false." The second had changed dramatically. The six-year-old Jane claimed that her mother molested her while bathing her, putting her fingers into Jane's vagina and asking, 'That feel good?' many times. But the seventeen-year-old Jane remembered a quite different event—the picture now in her mind "is of a single, deep vaginal intrusion, several seconds in duration and extremely painful" (124). Neisser wrote that perhaps the single dramatic event in Jane's age-seventeen memory misrepresents a long series of "unpleasant but relatively pedestrian childhood experiences"—being bathed by her mother. Still, he later referred to them as "irritating and unpleasant bathtub episodes, clear examples of abusive behavior on her mother's part." After reminding readers that discovered memories that return can be entirely false, partly false, somewhat distorted, or also accurate, Neisser nonetheless expressed his gratitude to those who made the videotapes available.

Once in the literature, Corwin's case history was embraced by many. One group of pro-dissociation writers described it in detail, and then commented that the case was a "good example of substantial forgetting and later recovery of a corroborated childhood sexual abuse memory" (Brown, Scheflin, and Whitfield 1999, 65). Lawyers presented the case at conferences, assuming it was authentic (e.g., P. Brown, 1999). Expert witnesses began presenting the case in court as concrete proof of the validity of repressed memories (*State of Rhode Island* v. *Quattrocchi* 1998). Professors began teaching the case in their university courses (Steve Clark, personal communication 8/16/01).

Thus Corwin's case study was vivid and compelling. Leading scientists were persuaded by it; indeed, emotionally moved by it. Few considered any other possible explanations of Jane's behavior at six or at seventeen. Few were skeptical that Jane really had been abused by her mother before age six, that her retrieved memories were accurate, or that "repression" accounted for her forgetting what her mother supposedly had done to her.

But we were. In 1984, when Corwin was called in to assess this case, Jane's parents had already been battling over her custody for five years. (They separated for the first time when Jane was only 8 months old.) In those days, few experts were aware of the way children's memories can be tainted by interviewers who are on a mission to find evidence of sexual abuse. Few knew how to interview children in nonsuggestive, noncoercive ways. Many social workers and clinicians believed that children

don't utter falsehoods about sexual abuse—a premise that has long been shown to be wrong. Like adults, children can tell the truth, and they can also be influenced and manipulated into saying things that are not so (Ceci and Bruck 1993). Psychological science has contributed a great deal, especially since the early 1980s, to our understanding of the malleability of memory of adults and children.

In the last two decades, the two of us have conducted research on these issues and testified in court cases, out of our concern about false allegations of abuse—allegations that are especially likely to occur in emotionally fraught custody battles. So, just as Corwin had a vested interest in persuading others that his initial judgment about Jane was correct—that the mother had indeed molested her—and that some repression-like process is indeed the mechanism that prevents children from remembering such trauma, we had a vested interest in learning if he had provided the whole truth, and nothing but the truth.

And so we set out on an odyssey to learn more about the case. Our investigation produced much valuable information that should assist scholars in making their own decisions about whether Jane was abused, and if so, by whom.

Our Search for the Full Story

Corwin disguised the case—using names like Jane Doe and John Doe, Momstown, Dadstown. But he showed the tapes at a number of professional meetings, and the tapes mention Jane's real first name and the city where some of her childhood activities took place. We searched legal databases with a handful of key words, and found an appellate court case involving Jane.

From the case we learned that Jane's father, whom we will call "Dad," had been found in contempt of court for failing to comply with visitation orders on three separate occasions. He was sentenced to fifteen days in jail for refusing to allow Jane's mother and grandmother their court-ordered visitations with Jane. This was interesting; why did Corwin mention the mother's jailing but not tell us about the father's? Corwin had made a point of the mother's jailing for "fraud" in comparing her credibility to the father's; we learned that she had been incarcerated for misdemeanor welfare fraud, during which time Dad was given temporary custody of Jane. Upon her release, Mom sought custody. The court, however, based on Dad's accusations that Mom had physically abused Jane by "burning" her feet on the stove, ordered joint custody to the parents and physical custody to the father. The custody war escalated, eventually involving allegations by Dad that Mom abused Jane not only physically, but sexually.

When Child Protection Services (CPS) in the mother's home county investigated these allegations, however, they turned up nothing, and CPS recommended that no action be taken. The father then went to another county, eighty miles away, to repeat in another court his allegations that the mother was sexually abusing Jane and had burned her feet "months and years before" (according to the published court case). This involvement of a second court, one which challenged the jurisdiction of the first court, led to the appellate case that resolved the jurisdictional dispute over which court had primary control when child abuse was alleged. One appellate judge, writing in that opinion, explicitly criticized the father for this "blatant forum shopping for the sole purpose of avoiding what he anticipated would be adverse rulings by the (Mom's county) court on the various custody and visitation motions then pending in that court." Why did Corwin not tell us that the mother's county CPS had thoroughly investigated the father's charges and recommended that no action be taken? Of course, this doesn't mean that no abuse occurred, but the information is surely relevant.

When Child Protection Services (CPS) in the mother's home county investigated the allegations they turned up nothing, and CPS recommended that no action be taken.

From this appellate court case we now knew Dad's first name and the first letter of his last name, but the rest of his identity was not revealed. We knew only, from Corwin's article, that he had died in November 1994. After a long and tedious search of the social security death records and newspaper obituaries, we found out who he was, and from there we uncovered the full history of the custody dispute and the abuse allegations.

Corwin informs readers of the report of the social worker, who believed Jane's claims against her mother. But he omitted a letter from a clinical psychologist (Dr. S.), written to a judge in February 1984. Dr. S., in accordance with a court order, had interviewed Dad, StepMom, Mom, and Jane. He spoke with Mom's therapist, Jane's psychologist, a CPS worker, Jane's brother, Grandma, and Mom's attorney. He read police reports, court orders, medical reports, and court transcripts. Dad told Dr. S. that Mom abuses Jane: hits her, pulls her hair, calls her names ("you shit"), and sticks her fingers up Jane's vagina and anus to clean her out, allegedly asking "does that feel good?" while doing so. Mom denied doing these things, and told Dr. S. that three CPS investigations and numerous court proceedings related to these charges had occurred, but none found her guilty of the "supposed abuse."

Dr. S. wrote in his letter to the judge that although some documents supported the premise that some type of abuse had occurred, "what has not been made clear is the source or nature of the abuse—whether these are actual physical and sexual abuses perpetrated by (Mom) or whether they exist only in the mind and fantasy of (Dad) and are communicated to (Jane) as (Mom) contends." Dr. S. noted that Jane's narration of her story was not spontaneous: "She has told her story numerous times to a number of different people and she now sounds mechanical." As for the burned feet, he said: "It was never determined if her feet and hand were indeed burned, since (Jane) has a fungus

condition that causes her skin to blister and peel."

So in addition to whatever a social worker may have believed about the abuse, we would learn that a psychologist had a compelling dissenting conclusion. And, importantly, an alternative explanation existed for the allegedly "burned feet."

Mom's Life—Then and Now

With Dad's last name in hand, we wondered whether we could find Mom from information contained in the divorce file. Our assistant found Mom and contacted her at her modest home. When he explained why he was there, Mom welcomed him, sobbing her way through his interview, saying, "I never thought this day would come." The court battle she had had with Dad over Jane was a "nightmare," she said, "that never ended." The situation devastated her financially and destroyed her health. Throughout the years she expressed her grief in unpolished poetry which she shared with us.

Mom also described the consequences of Corwin's reappearance in her daughter's life. After Dad died in 1994, Mom was able to renew contact with her daughter, and had had a "very positive relationship" with her for about fourteen months. It ended, she said, when Corwin arrived on the scene. As our assistant reported: "Dr. Corwin contacted (Jane) to 'review' the old allegations that were made against Mom. . . . Mom said that after Dr. Corwin 'reviewed' the allegations with Jane, she allegedly recovered a memory of Mom bathing her. This memory made Jane believe that she in fact was molested and abused by Mom. After Jane's contact with Dr. Corwin, Mom received an angry telephone call from Jane. According to Mom, Jane screamed at her in a hostile manner, accusing Mom of molesting her. Jane cut off contact with her mother."

Mom's mother's closest friend, whom we'll call Alice, had known Mom since she was born, and also had strong views. She was familiar with the custody case, as she had attended almost all of the court proceedings and frequently went with Mom to pick up Jane for visitation. Alice described Mom as a good person and good mother. She talked of the trauma of the custody battle for Mom: "[Dad] had quite a bit of money, and he was able to pay for his attorney to continually take Mom to court." Alice was adamant that "no way did any of the allegations occur." Mom, she said, loved Jane and would never have harmed her in any way; it was Dad who coerced Jane to make up the allegations. Alice also reported that Dad treated Jane's older brother, "John," badly.

John, now in his thirties, has concurred that in no way did his mother ever abuse Jane. On the contrary, he said, it was his stepfather who was the abusive one, both to himself and to his mother. John had memories of Dad beating him with a belt that had metal circles on it, leaving imprints on his skin. John said that he was never interviewed by Corwin regarding this matter.

After reviewing this preliminary information, we contacted Mom directly. She was eager for us to visit, which we did. She lives in a town of pickup trucks and soda fountains—an "American Graffiti" sort of place. Mom told us a few things, of course from her perspective, that never appeared in any of Corwin's accounts of this case:

- On Dad's presumably good qualities as a father: Dad had two older children other than Jane from a previous marriage, with whom he had no relationship. He "left them $1 in his will," Mom said.
- On the custody war: "I was broke in every sense of the word. I couldn't defend myself." Indeed, Dad had retained a successful lawyer whereas Mom had to rely in large part on legal aid.
- On the allegations of the burned feet: Mom confirmed what was in Dr. S.'s report in the divorce file: Both she and Jane had a bad fungal condition, which leaves scarring that can seem like burns. Mom even showed us some remnants of this condition on one of her fingers.
- On why she divorced Dad: He would scream at her all night long. He drank scotch in the way that most people drink water. He'd drink it straight, sometimes finishing off the whole bottle. He threw her around. Dad told her if she left him he would take Jane away from her and destroy her life.
- On Dad's honesty: He got money by reporting supposedly stolen or lost jewelry to the insurance company.
- On the welfare fraud for which she spent two months in jail: Because Dad paid child support so erratically, she never knew when she would be getting money from him. So Mom had filled out forms saying Jane's father was not supporting Jane. She neglected to mention a few payments that had been made, and was therefore convicted of welfare fraud.

All in all, a different picture from Corwin's portrayal of the credible, kindly dad and the thieving, abusive mom. Why did he not give us Mom's perspective—that Dad was a problem drinker, that he beat her son, that he had cheated an insurance company? As we dug into the history of this troubled marriage, we found more information that Corwin had omitted in his case study, all in public records.

When Dad and Mom first separated, Mom was awarded custody and support of $200 per month. Just nine months later, Dad asked the court to reduce his child support to $100 per month. He also asked for more specific visitation rules. Because he was in arrears on his child support, she was refusing visitation, and Dad asked that Mom be found in contempt of court for denying visitation. She responded by asking for supervised visits between Dad and Jane, claiming that he was "emotionally unstable and he drinks and uses drugs and alcohol to excess."

The court reduced child support, designed more specific visitation for Dad, and found Mom in contempt for not permitting the ordered visitations. But the couple continued to quarrel, in and out of court, over the next years.

One day, when Dad picked up Jane for a visit (she was not yet four years old), he noticed a problem with her feet and took her to a hospital in his area. The doctor there reportedly found what could be construed as "almost completely healed second degree burns on the plantar feet and palmar left hand." Dad then took Jane to another hospital, and that report too indicated that "old burns of both feet and left hand were found."

Shortly thereafter, the father's attorney put in requests for records from hospitals, the sheriff's department, child protection agencies, and other institutions relating to "possible child

abuse incidents relative to" Jane. By this time, Mom's welfare difficulties were underway. While she was briefly in jail, Dad got custody, and he was explicitly ordered not to drink while with his daughter. The same order gave Mom's mother, *Grandma, visitation rights.*

When Mom was released from jail, she filed for custody of Jane. Grandma signed the following declaration in support:

> The primary concern I have is for the safety and well being, both physical and mental, of my granddaughter Jane. Toward this end I wish to advise the Court that Dad is a character of extreme emotional instability. When my daughter and Dad were living together, Dad would regularly assault my grandson, John, who is now age eleven (11). On one occasion in 1977, my grandson was beaten so severely he was unable to remove himself from his bed for an entire day. His entire face was swollen to a pulp and he was unable to move. Although that particular occasion was the most severe, it was not an isolated incident. It is my belief that Dad has a problem associated with alcohol which may have resulted *in such violent activity.*

Mom did get custody back. Jane was now almost five years old, but Dad's efforts to gain custody escalated. A judge found that both parents were concerned about their child, but he was worried about the apparent findings by an emergency room doctor that there were burns on Jane's palm and fingers of the left hand. Thus, "out of an abundance of caution," the Court decided to award joint custody, with physical custody with Dad, and "reasonable rights of visitation to (Mom) as the parties can agree." The Court ended its order by quoting the words of a clinical psychologist that it is "unfortunate that the child has to bear the effects of this contest."

Even so, the contest was not over. Within a year, Dad was claiming that Jane had told him that Mom was abusing her, and Mom was complaining about visitation problems caused by Dad. The litigation dragged on and on, and in mid 1984, when Jane was five, Corwin entered the case and began his forensic interviews. He sided with the father's version of events, opining that Jane had been physically and sexually abused by Mom. Based on Corwin's report, a child protection staff worker in [Dadstown] recommended that Jane have no contact with her mother. Given his belief, it remains a mystery why no child abuse charges were filed against Mom.

And there matters ended—almost. Dad had succeeded in removing Mom from Jane's life, and she, too exhausted after a five-year battle, gave up her efforts to pursue her rights for visitation. When Jane was nine years old, her father and stepmother divorced and her father had bypass surgery. When Jane was about fifteen, Dad fell seriously ill and entered a convalescent hospital. Jane went into foster care; Dad died a year later.

Jane's Life After Mom Was Gone

Next we interviewed Jane's foster mother, who talked for nearly four hours, of course from her perspective. What follows are her recollections as revealed to us. When Jane came to stay with her, FosterMom said, Jane was extremely distressed. Her father had had a heart attack and could not care for her. Her stepmother, long divorced from her father, was out of the picture.

At FosterMom's urging, Jane tried to put the "puzzle pieces" of her past together. They talked about her memory of the "burned feet," and at one point even checked out the mom's "electric stove" whose coils had allegedly caused the burns; they found it was a gas stove—there were no coils to leave an "imprint." They wondered whether she had perhaps burned her feet when she walked on hot cement in the summer. But at other times, Jane would come up with "visions." She saw herself standing on the stove, and she would cry.

Jane began rethinking the subject of sex abuse. At first Jane hated her mother, thinking it had happened. Then she began to have doubts, wondering whether she could have made it up.

Eventually, FosterMom contacted Mom, and invited her to visit. The first meeting, said FosterMom, was "really beautiful." The night after her mother left, Jane said, "I knew she was my mother. It felt so familiar."

During this period of Mom's visitations, Jane began rethinking the subject of sex abuse. According to FosterMom, at first Jane hated her mother, thinking it had happened. Then she began to have doubts, wondering whether she could have made it up. Together, FosterMom and Jane explored what Jane remembered. Jane kept worrying. "What if I just said it? What if Dad put me up to it? I said it but did it really happen?" And then: "I wouldn't have said it if it didn't happen."

And then, as Jane was struggling to find out the truth and beginning to question whether the abuse had even occurred—as her father had repeatedly told her—Corwin entered the picture. He called FosterMom, saying he was doing research and wanted to interview Jane again. Jane wanted to do it to learn more, so FosterMom took her to the interview. When Corwin showed her the tape of herself at age six, Jane held her head and screamed, "Oh God! She did it! She did it. I can see it. I can see it." FosterMom said it broke her heart to watch Jane's reaction. After that, said FosterMom, she knew for sure, "beyond a shadow of a doubt," that Jane's mother had abused her. "That was," she concluded, "an ugly day."

FosterMom heard the phone call that Jane made to Mom after her interview with Corwin. It was short, cold, and angry. Jane called her by her first name (not Mom), and said something like, "I know that you molested me." Jane wrote a letter to her mother that FosterMom had a chance to read: "You did this. Why did you do this? How could you do that to your little girl?" She would not listen to her mother's protestations that Dad had made it up.

According to FosterMom, Jane changed dramatically after the interview with Corwin. She went into herself. She became depressed. She started behaving in self-destructive ways, and soon left FosterMom's home. At our meeting, FosterMom said

she hadn't spoken to Jane in ten months, ever since Jane called her, angry and belligerent. FosterMom wondered whether Jane was suffering because of having seen the tape. Had the "Corwin thing" sent her over the edge, or was she unhappy for some other reason? Was she rejecting FosterMom because of the older woman's strict rules against staying out late and misbehavior, or because she was trying to run away from her own misery? FosterMom mused: "Would she have been better off not to remember? I don't know."

There was one other person to interview: StepMom, to hear her perspective of the sexual abuse allegations and where they came from. Early in the interview, she volunteered that the way that they got Jane away from Mom was "the sexual angle." "We proved it," StepMom said. "We saw abuse on her body. We started documenting it."

We asked her about the trip she and Dad made to the hospital in June of 1982 to have Jane's feet checked. StepMom said Mom burned Jane's feet because Jane wasn't staying in her room. Mom had "johns" over and was getting fed up with Jane. "Jane told us what happened, and we saw the burns," StepMom said. "It was with an electric coil. You could see these on the bottom of her feet." When asked why they went to second hospital with Jane that same day, she said, "We stopped at two of them. We stopped at 'here' first, then 'there' to get documentation. We wanted to document as much as we could. We were building a case against this woman. We were going for broke."

StepMom's animosity towards Mom was apparent throughout the interview. She accused Mom of being a prostitute, of locking Jane in her bedroom, of leaving her abandoned, and of binding the child and placing her feet on the stove. She called Mom a "leech," a woman who always had her hand out. "She has a black soul," she said.

StepMom accused Mom of taking soft-porn photos of John and of Jane, and peddling them. We asked how she found this out. "The police found it out," she replied, "and also Jane told us she was posing with John and that her mother was taking pictures. That's why I say she's a blackened soul." We asked whether the police ever found the photos. "I'm not sure," she said.

She later added that Jane had talked with her about the sexual abuse from ages four to nine. Although Corwin would claim that Jane had "repressed" the memory, both FosterMom and StepMom reported to us that Jane did talk about those past experiences frequently. StepMom said:

> She always remembered it. But there was just the times that she wanted not to talk about it because of what it brought back. We talked because we were very close. Her mom would lie to Jane and you know, she would be in the bathtub bathing Jane, but she would tell Jane the reason why she put her fingers up her vagina was to get her clean. . . . But the way she did it was hurtful to—very rough. And not just up, but back and forth, back and forth. And I said to Dad, I said, "what she's doing basically is getting this child ready to use her later on for sex."

Later in the interview, StepMom said proudly, "I helped get Jane for Dad because we were married. I was a much younger woman. I don't have any bitterness toward Mom, I'm just saying, thank God Jane got out. And everything that Dad and I was, did together, was not in vain. . . . All that money we put in and all the time that we sacrificed, and, [it] was worth it. I'd do it all over again. All over again."

Of course, a current wife's anger and antipathy toward her husband's former wife, especially where issues of money and custody are involved, are quite understandable, and in some cases justifiable. How, then, should a scientifically minded investigator assess her testimony in contrast to Mom's account of events? Which is more credible? In science as in a court of law, both women would be cross-examined, and supporting or disconfirming evidence would be brought to bear. Corwin, of course, accepted StepMom's version of events relatively uncritically. But here is some evidence that might lead one to question her motives and account of events. Other evidence bears on StepMom's marital history or legal troubles—the type of evidence Corwin used to compare relative credibility, however dubious such comparisons on this basis might be:

- Dad and StepMom married on 12/30/83, the very same month that Jane would make her first "reports" of sexual abuse about Mom; the couple separated three years and ten months later. Jane was only nine. Dad accused StepMom of appropriating valuable items from the house while he was hospitalized for bypass surgery.

- StepMom subsequently married once again. Court documents reveal a 1991 "Order to Show Cause and Temporary Restraining Order" filed against StepMom by her new husband. He declared that StepMom had fraudulently claimed that he had physically abused her.

- StepMom had further troubles in the mid-1990s with a misdemeanor arrest for vandalism; the charges were brought by a woman, and the case appears to have been dismissed.

In sum, we believe that there are ample reasons to doubt whether Jane Doe was physically or sexually abused by her mother, and to doubt much of the "supporting evidence" used to support the abuse hypothesis. Contrary to Corwin's claims, Jane's reports about her experience at the time were not particularly consistent. The argument that Dad had superior credibility over Mom in terms of marital stability, criminal records, and other behavior did not hold up. At least one expert, Dr. S., who appears to have done the most thorough investigation, was unconvinced that abuse had occurred. Finally, there was ample evidence that Jane talked about the abuse allegations on innumerable occasions with several people between the two sessions during which she was videotaped, undermining claims of massive repression or dissociation.

Acknowledgments

We are enormously grateful to Carol Tavris, so generous of her time and her talent, a veritable muse. Many other individuals, friends and colleagues, provided valuable insights and editing assistance.

Part 2 will appear in our next issue (July/August 2002), with sections on "Issues, Questions, and Future Directions" and "The Ethics of Exploring Jane Doe's Case." It also will present the references for the entire article, Parts 1 and 2. □

Is the Mars Effect a Social Effect?

A re-analysis of the Gauquelin data suggests that hitherto baffling planetary effects may be simple social effects in disguise.

GEOFFREY DEAN

For almost half a century, supporters and critics of the Gauquelins' astrology-like Mars effect have been locked in dispute. The effect is hard to study, but it involves a staggering array of puzzles, all seemingly inexplicable. To outsiders the dispute has ignored the puzzles and become lost in obscure technicalities. It needs a new approach. In what follows we adopt a social viewpoint and discover that, contrary to what critics thought, *planetary effects are to be expected*, so their absence would be more surprising than their presence. Along the way the dispute, puzzles, and support for astrology disappear. For sociologists the massive Gauquelin database emerges as a valuable new resource. Readers who would like more detail than is possible here will find it in Dean (2000).

Figure 1. From a world in the hands of God to a world in the hands of man. From the title page of *Hamburgisch verbesserter Christ- und Planetenkalender* for 1727, with the English translation imposed by me in Gothic type. On the left, man prays to his heavenly Father, because to love God is all that matters. On the right, beyond the tree of knowledge, man studies nature directly but claims it is only to confirm the glory of God. The ancient worldview on the left, which included the man-macrocosm interplay that was astrology, was beginning to fade but was still held in the times and places of the Gauquelin births. Today it has disappeared, so we are unable to see the significance that planets once had. From Imhof (1996, 160).

Background

After forty years of skeptical investigations, the most famous in astrology, the late Michel Gauquelin (1991) concluded: "Having collected half a million dates of birth from the most diverse people, I have been able to observe that the majority of the elements in a horoscope seem not to possess any of the influences which have been attributed to them." This understandably upset astrologers and pleased critics.

But two of his findings pleased astrologers, upset critics, and puzzled everyone else. (1) Professional people such as scientists tended to be born with a surplus or deficit of certain planets in the areas just past rise or culmination, but only if the people were eminent and born naturally. (2) Ordinary people with such features tended to pass them on to their children. Both tendencies were very weak and required large samples for their detection. They had no obvious explanation.

20 **OCTOBER XXXI Days.**

THOSE who assert the lunar orb presides
O'er humid bodies, and the ocean guides;
Whose waves obsequious ebb, or swelling run
With the declining or increasing Moon;
With reason seem her empire to maintain,
As mistress of the rivers and the main.

M D	W D	Fasts and Festivals.	☉ ♎	☽'s Signs.	☽'s A	☽ rises & sets.	Mutual Asp. & Weather.
			°			h. m.	
1	A	15 S.aft.T.: *Rem.*	8	domin.	4	7 a 41	☿ in aphelion.
2	M	Day br 4 11	9	hips	5	8 15	Weather
3	♎	♄ sets 4 15 mo.	10	and	6	8 56	alternately
4	W	♅ rises 0 53 mo.	11	thighs	7	9 41	fair and wet.
5	♏	Twi. ends 7 20	12	knees	8	10 35	
6	F	*Faith*	13	hams	9	11 34	☌ ♂ ♅
7	S	♂ rises 6 28 mo.	14	legs	10	morn.	Expect some
8	A	16 Sun. aft. Trin.	15	ancles	11	0 39	heavy rain:
9	M	*St. Denys*	16	feet	12	1 49	thunder in
10	♎	*Oxf. & Cam. T.b.*	17	toes	13	3 4	☍ ☉ ♅
11	W	*Old Mich. Day*	18	head	14	4 21	☌ ♂ ♅
12	♏	Least twilight	19	face	F	rises	some places.
13	F	*Trs. K.Ed. Conf.*	20	neck	16	6 a 1	☌ ☉ ♅
14	S	Day decr. 5 51	21	throat	17	6 38	☿ in ♉
15	A	17 Sun. aft. Trin.	22	arms	18	7 21	Now fair,
16	M	♀ sets 5 49 aft.	23	should.	19	8 11	♂ ☉ ♂

Figure 2. Planetary information in the almanac *Vox Stellarum* 1848, then selling one copy for every six British families and also popular in Paris. On the 3rd, 4th, 7th, 16th, respectively Saturn sets, Jupiter rises, Mars rises, Venus sets. Second-last column, moon rises and sets. Until the late nineteenth century, almanacs were the most widely read literature after the Bible. To sell they had to reflect the prevailing world views. The French folklorist Pierre Saintyves (1937) comments: "thanks to almanacs, in their 10,000s and hundreds of 10,000s, the [debased] astrological tradition during five centuries never ceased to be received."

The effect had nothing to do with sun signs or other zodiacal signs. What mattered was the planet's diurnal (daily) position relative to the horizon—whether it was rising in the east or culminating overhead.

The effect was later called the Mars effect because Mars was the significant planet for sports champions, who were then the focus of attention. But depending on the occupation (there were nine others) it could have been called the Moon, Venus, Jupiter or Saturn effect. For more background see Ertel (1992). Here I will be considering all five effects for both eminent professionals and ordinary people.

But haven't independent studies shown that the Mars effect is merely the result of biased statistics and data selection? So why should anyone bother with it? If you can bear with me, the answer should be apparent in due course.

Puzzles for Astrology and Science

Ironically the Gauquelin planetary effects are as puzzling for astrology as they are for science. For science the puzzles include: Why no link with physical variables such as distance, why no link with the Sun, why is eminence important, why an effect only at birth, why contrary to all expectation is the effect

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larger for rounded birth times, and why does it disappear when the birth is induced or surgically assisted?

For astrology (don't worry if the jargon is beyond you) the puzzles include: Why only diurnal position and not signs or aspects, why traditionally weak positions (cadent houses) and not strong ones, why occupation and not character (a claimed link with character was in fact an artifact, see Ertel 1993), and why only five planets? After all, astrologers do not claim that astrology fails to work for half the planets, for signs, for aspects, for character, or (on Gauquelin's figures) for the 99.994 percent of the population who *are not eminent*.

The above puzzles seem utterly baffling. What could be happening? Why are these planetary effects so inconsistent with both science and astrology? As is usual with puzzles, the key lies in asking the right question.

Could Planetary Effects be Man-Made?

Look at the Gauquelin births in their social context. Most of the births occurred during the nineteenth and early twentieth centuries in Western Europe, when living conditions were very different from those today, and when early world views still survived (figure 1). It was a time when births were reported verbally to the registry office by the parents,[1] when occupations and eminence tended to run in families,[2,3] when serious astrology had been dead since the 1700s, and when popular almanacs gave diurnal information for the visible planets (figure 2), that is, rising, setting and sometimes culminating times. Notice how this planetary information immediately matches the Gauquelin findings.[4]

In short, what made the Gauquelin period different from *today was the availability of diurnal* planetary information, the opportunity to adjust birth data without detection, and the motivation to do so from family traditions and world views. So perhaps fake planetary effects could arise due to: (1) Role-playing. We know what our planetary positions mean and adjust our behavior to suit. (2) Parental tampering. Parents want the relevant planet in a position that fits family traditions, so they adjust our birth time before reporting it to the registry office. (3) Perinatal control. The same but via control of the birth process by mothers and midwives.

Planetary effects are so tiny that surprisingly little faking is needed to explain them—on average just one in thirty births is enough. This is similar to the influence of astrological beliefs on birth planning by modern Asians (Goodkind 1991, Kaku 1975), and considerably less than the one in thirteen observed for Sun sign role-playing (Dean, Mather, and Kelly 1996). So it should not seem implausible that Gauquelin's subjects might role-play their planets or adjust their children's birth data. But could such effects be detected in the Gauquelin data?

I began by counting births on days said to be significant by European encyclopedias of superstition. . . . Days were preferred if desirable, such as Christian feast days, and avoided if undesirable, such as witching days, showing that parents were faking birth data to suit beliefs.

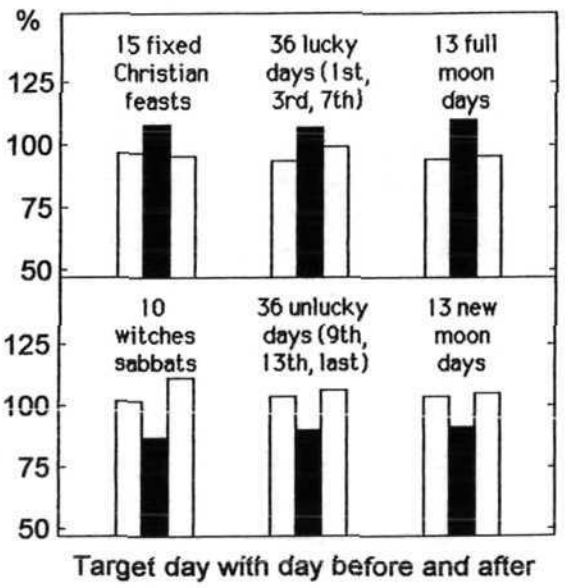

Figure 3. Birth counts on significant days for the Gauquelins' 15,942 eminent professionals adjusted to a mean of 100 percent in each plot. The parents of future eminent professionals prefer births on Christian feast days, lucky days, and full moon days. They avoid births on witching days, unlucky days, and new moon days. The mean difference from adjacent days is 12 percent. The differences make sense because preferred days are auspicious and therefore desirable, avoided days are inauspicious and therefore undesirable. The message is unmistakable—parents are *faking birth data to suit prevailing beliefs.*

Re-analysis of Gauquelin Data

To find out, I re-analyzed two important Gauquelin data sets. (1) The original 15,942 eminent professionals spread over ten occupations (actors, journalists, military men, musicians, painters, physicians, politicians, scientists, sports champions, and writers), whose results were published in *1960*. (2) The 24,948 ordinary people (parents and children) from the Gauquelins' first heredity study published in 1966. The eminent professionals were born in Western Europe mostly in 1820–1940, and *are mostly male*. The ordinary people were born somewhat later near Paris and are 51 percent female. (1) and (2) led to the Gauquelins' most successful results, so they are the data to look at. I began by counting births on days said to be significant by European encyclopedias of superstition.

For eminent professionals the results were revealing. Days were preferred if desirable, such as Christian feast days, and avoided if undesirable, such as witching days, showing that parents were faking birth data to suit prevailing beliefs (figure 3).

The avoidance of witching days is understandable given the massive witch hunts that for three centuries had terrorized Western Europe. The amount of faking varied with the kind of day, but on average it involved about one in twenty-five births. So already the faking of *days* is more than the one in thirty faking of *hours* needed to explain planetary effects. Note that had I looked only at sports champions, the sample size might have been too small, and such faking might have been missed.

Now hours. Interestingly, there is a huge drop in the proportion of births reported during the midnight hour, but it occurs in most sets of historic data and is normally attributed to registrars rounding times away from midnight to make it clear which day they belonged to. However, when I plotted planetary effect against the proportion of midnight births for each professional group, there is a strong negative correlation (figure 4). The tendency to prefer planets goes with the tendency to avoid midnight, which implies that faking is common to both. Midnight is of course when witches are proverbially active, so parents who avoided witching days would want to avoid midnight hours as well.[5]

If we can fake an auspicious birth date, or a planetary indication of greatness in a chosen occupation, it could have useful consequences. Being suitably destined in the eyes of the child and others has advantages.

The same implication appeared when I compared high and low levels of faking. The mean planetary effect on desirable days (whose births have maximum faking) was more than twice that on undesirable days (whose births have minimum faking). *The point is, none of these things should happen if planetary effects were unrelated to social effects. Nor should they happen if planetary effects did not exist.*

But why fake? If we really believe that certain times are auspicious, we can hardly believe that faking will change anything. On the other hand, if we do not believe, why bother? We might of course see faking as merely helping an imperfect world unfold as it should. But look at why we might want to avoid witching days or midnight hours. Even if we saw nothing wrong with a witching time, other people (and the child) might disagree, which could have dire consequences. So we fake. Similarly, if we can fake an auspicious birth date, or a planetary indication of greatness in a chosen occupation, it could have useful consequences. Being suitably destined in the eyes of the child and others has advantages. The same motivation exists today when hotels omit 13 from floor and room numbers lest their occupancy be affected, and when psychologists control for the expectations of experimenters.

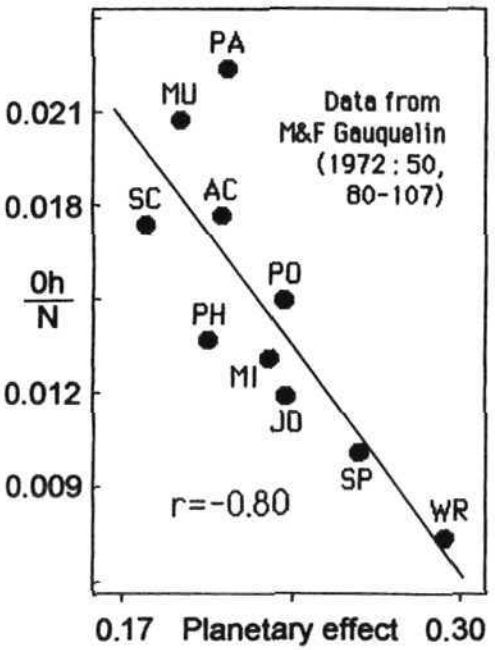

Figure 4. Proportion of births during the midnight hour (vertical axis) for Gauquelin's ten professional groups (see text) versus planetary effect (horizontal axis) calculated as I(O-E)I/E, where O and E are the observed and expected frequencies of births with the most significant planet in the areas just past rise or culmination. As the proportion of midnight births decreases, implying an increase in faking, the planetary effect increases. The correlation is remarkably high (r = -0.80) and highly significant (p = 0.005). Gauquelin was unaware of any such connection, so it cannot be dismissed as data selection or some other bias.

Gender Rules

The results for families showed much the same faking as for professionals, but this time the preferred days were family-related with a distinct gender influence. For example children tended to be born on the same date or weekday as their same-sex parent, showing that parents wanted more uniformity than was allowed by nature. This may reflect the sort of traditions that led to particular weekdays being chosen for events such as weddings (Imhof 1996, 125).

Gender influences also emerged in the planetary effects passed on by parents to their children. Regardless of planet, the passing on for same-sex parents was roughly twice that for opposite-sex parents. That is, sons were more like their fathers and daughters were more like their mothers, which makes sense. Or as Lady Catherine de Bourgh says in Jane Austen's *Pride and Prejudice* (1813), "daughters are never of much consequence to a father." But it did not end there.

Gauquelin had seen parent-child effects as confirming the reality of planetary effects. He had found that fathers and mothers contributed roughly equal amounts of planetary effect to their children, which suggested a link with genetics. But he did not make same-sex and opposite-sex comparisons, and although he was aware of superstitious beliefs such as those favoring even hours over odd hours, he felt they were unlikely to simulate planetary effects. Blur, yes, simulate, no. However, genetics predicts equal contributions regardless of sex whereas social effects predict unequal contributions. So we have the classic situation of two rival hypotheses. In this case the winner is social effects.

Solving the Puzzles

The hitherto baffling puzzles can now be solved. Why do the Gauquelin findings conflict with astrology? Because astrology had been effectively dead since the 1700s, and all that remained was a debased remnant limited to planets that could be seen in the sky or read in almanacs. To be seen, planets had to be visibly above the horizon, even

though this was traditionally a weak position due to the planetary beams being "impaired by the thick and dark exhalations arising from the earth's vapours" (Ashmand 1917). In other words the conflict is between astrology and its debased remnant. There is no conflict between its remnant and the Gauquelin findings.

Similarly the planetary link is with occupation and not character because that was the belief in those days.[6] There is no effect for signs or aspects because in almanacs the link was with seasons or weather, and in any case the required adjustment (days or weeks) is too great to be feasible.

The puzzles for science are solved just as easily. There is no link with physical variables such as distance or gravity because they were not part of popular belief. There is no effect for the Sun because its position was relevant only to the seasons and to seasonal work on the farm. There is an effect only at birth because that was the popular belief. Occupation effects are strongest where family traditions are strongest, where the match between planets and occupation is closest, and where there is most need to be suitably destined, as in eminent families. Hence the importance of eminence.

But why is the planetary effect for precise birth times half that for birth times rounded to the hour? This is like saying the more we tune our radio the worse the reception. It is not at all what we expect. No astrologer, no skeptic, not even Gauquelin would have predicted such a result. But faked times do not need to be precise. What matters is the planet's general diurnal position, not its exact diurnal position, so the precision to which clocks would normally be read is not needed. Rounded times are good enough, and as a bonus they do not raise town hall suspicions like a precise birth time might. In other words faking increases rounding and also increases planetary effects. In hindsight it seems so simple, so obvious.

Solving the Disappearing Act

Why do planetary effects disappear when the birth is induced or surgically assisted? Gauquelin (1983) had noted how "the Mars effect in sports champions born after 1950 tends to disappear." Planetary effects also disappeared for Gauquelin's 1984 heredity study despite its huge sample of nearly 51,000 parents and children. The problem, Gauquelin suggested, arose because the births were more recent and were therefore subject to medical intervention, which had upset the natural timing of birth and therefore (in his view) the natural planetary links. But recent births, unlike early births, needed to be officially documented with a note from the hospital or midwife, which meant an end to faking other than role-playing. Hence the decline in planetary effects. After all, the idea that faking is being prevented is more plausible than the idea that all hospitals and all midwives are intervening medically in all births. Also, the reestablishment of astrology in the 1930s meant a gradual end to the debased remnant and its match with the Gauquelin findings. Ironically his 1984 study has told us more by its failure than it would have by its success.

Conclusion

The dispute between Gauquelin supporters and critics is easily resolved. Most, perhaps all, of the Mars and other planetary effects are merely social effects in disguise. They have been in the data all along. The Gauquelins had found a real effect but, contrary to what everyone thought, there was no conflict with science and no need for disbelief. Both sides can now retire with honor.[7]

The Gauquelins had found a real effect but, contrary to what everyone thought, there was no conflict with science and no need for disbelief.

Some supporters have attributed planetary effects to divine forces, or magnetospheric resonance, or the pineal gland, or genetic imprinting (see Ertel 1992). But such explanations are clearly premature. Data selection and fraud can be rejected because Gauquelin could hardly be selective or fraudulent about social effects he was unaware of. Claims by astrologers of support for astrology, where for example planetary effects are "primary truths about man's relationship to the cosmos" (Addey 1996), whose explanation "will strain the possibilities of mechanism" (Hand 1987), can also be rejected.

The existence of social effects in the Gauquelin data makes it a valuable new resource for sociologists studying the nineteenth century. It seems unlikely that this data, which took such heroic effort to collect, will ever be equaled. Examples of how quite complex beliefs and family relationships can be explored are given by me in Dean (2000, 33–37).

Of course the existence of social effects does not deny the existence of inadvertent Gauquelin bias[8] or of genuine planetary effects. But unless planetary effects can be found under conditions where social effects are absent, as when parents are excluded from the birth reporting process and the child is ignorant of its birth planets, we might now reasonably suspend belief. Indeed, it could be argued that Gauquelin's failure to find planetary effects in births recorded after 1950 has already put this point to the test.

Acknowledgments

I thank Christopher French, Ivan Kelly, Arthur Mather, David Nias, and Rudolf Smit for helpful comments, and Suitbert Ertel for help with data and reference material. I am most grateful to the late Michel Gauquelin for many discussions and unfailing assistance during the fifteen years of our acquaintance. It was during our discussions in January 1991 that the idea of a new look at social context was born. He died four months later, tragically without knowing how it would turn out.

Notes

1. In France after the French Revolution of 1792, and subsequently in the other Gauquelin countries, the father of each new child became legally responsible for registering its birth date and time at the nearest town hall. The father had to be accompanied by two friends to confirm that the child was his, and by the child itself. There was no medical certificate as is routine today, and

most likely the two friends would not have witnessed the actual birth, so the father could easily adjust his report without detection.

2. The European family group was more important than the individual, and the inheritance of the family (whether real, as occupation, or symbolic, as names) had to be passed to succeeding generations (Gélis 1991). For example Imhof (1996, 116) cites a German farm where from the 1550s to the present day all the heads of the household were named Johannes Hooss, made possible by every family having one or more sons named Johannes so that one was always available to take over when the time came. What endured was the name. What mattered was not the individual life but the collective life, which among other things allowed death to be faced more calmly regardless of when or where it came.

3. In his 1869 book *Hereditary Genius*, Francis Galton found that great men produce more great sons than do average men. Based on the work of others, Gauquelin (1976) concluded the same: "In general terms, two-thirds of famous people originate from five percent of the population comprised primarily of the wealthiest and most intellectual people. A professional proclivity is transmitted from generation to generation."

4. People did not need astrology to prompt their interest in rising and culmination. Rising echoed the rising of the Sun, hence earthly and heavenly greatness (light is a frequent biblical metaphor for Jesus). Culmination signified something at its highest power, just as "the culmination of our efforts" does today. A planet exactly on the horizon was generally invisible and therefore without power, despite what astrology said. Just as moving past the rising point brought planets into prominence, so did moving past the culminating point. Conflicts of analogy would be out.

5. The midnight hour was universally the witching hour. For example in France it was "the great hour of marvels and terrors" (Sébillot 1904), and in Germany "the child that is born, or gives its first cry, in the evil hour [of midnight] becomes a witch" (Bächtold-Stäubli 1927). More famously in Shakespeare's *Hamlet* (1601) it was "the very witching time of night, when churchyards yawn and hell itself breathes out contagion to this world." It seems that people avoided reporting a midnight birth not merely because it was ambiguous but also because it was connected with witches.

6. Planetary themes today tend to focus on character traits. But in those days the focus was on occupation. First, it was a dominant part of family tradition. Thus a military family would want their new son to be a great soldier rather than, say, a stable extrovert. Second, only occupation could feasibly be shown in woodcuts. So we might expect socially-based planetary effects to be in terms of occupation—and they are.

7. Ironically Ertel (2000) disagrees. Since the 1980s he has championed the reality of planetary effects, so the present findings should be welcome. But Ertel dismisses social effects as implausible, so "the challenge of the Gauquelin anomaly is as alive as ever" (p. 82).

8. Gauquelin himself recognized the possibility of bias, which is why he later checked by computer his many tens of thousands of hand calculations (the indications were unchanged but were somewhat less significant, see Gauquelin 1984). He published all his data and invited anyone to check his records, all of which were meticulously organized and freely accessible. In terms of openness he set standards well above those of his opponents.

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Gray Barker's Book of Bunk

Mothman, Saucers, and MIB

Those who seek the elusive truth behind the "Men in Black" and "Mothman" myths should know that material touched by Gray Barker's enterprising hand is tainted by self-serving deceit. He launched hoaxes, joined others' deceptions, and manipulated people's beliefs. "And I," says our author, "was one of those who helped."

JOHN C. SHERWOOD

In the film of *The Mothman Prophecies*, a phone rings and Richard Gere cringes.

So does the informed moviegoer.

Pseudohistory from the 1960s is twisted into fiction for the new millennium, and a questionable account of bizarre events is reshaped into fantasy.

I say so because I have a good idea who's making that phone call.

I accuse Gray Barker.

Only naive audiences believe film dramas show history accurately. Fortunately, the mixed reviews for Sony Pictures' *Mothman* suggest few moviegoers or critics take its eerie

story seriously. Still, someone might trust the movie promoters' hints that truth exists out there. If they go searching they'll find only more questions.

The curious will find a new mass-market paperback edition of John A. Keel's *The Mothman Prophecies*, labeled by UFO writer Jacques Vallee as "significant" and "intriguing" (Hynek and Vallee 1975) and cited by Colin Wilson in *Alien Dawn* (Wilson 1998). In its pages:

- There's no sign of Gere's character, the fictional tormented widower "John Klein" invented by screenwriter Richard Hatem. Instead, the real-life Keel relates a series of weird anecdotal accounts sustained gleefully ever since by monster-hunters, UFO cultists, and West Virginia's tourism industry (Rife 1995).
- The mind-reading entity Indrid Cold evaporates into a fog of hearsay.
- The researcher played by Alan Bates morphs into Gray Barker, whose influence on Keel's book was palpably self-serving—and documentable.

Barker sure is having a great year. Columbia Pictures' sequel to its 1997 movie *Men in Black*—stepchild of Barker's 1956 book *They Knew Too Much About Flying Saucers*—will treat moviegoers again to Barker's alien spawn. But those who seek the elusive truth behind the Men in Black and Mothman myths should be reminded that material touched by Barker's enterprising hand is tainted by deceit.

Gray Baker in one of his favored poses, from the 1950s. Reproduced with permission from Clarksburg-Harrison Public Library.

Gray Barker

Barker was a theatrical film booker and educational-materials distributor based in Clarksburg, West Virginia. For three decades his sideline as a UFO writer/publisher generated extra income and self-satisfaction. The U.S. Government's bibliography of UFO publications reflected Barker's high status among the flying-saucer faithful, as he's among the handful of authors cited more than a dozen times (Catoe 1969).

Here's the dark side: Until Barker's death in 1984 at age 59, he hawked his books and magazines by embellishing stories and encouraging others to fabricate more. He launched hoaxes, joined others' deceptions, and manipulated people's beliefs. And I was one of those who helped.

Barker's UFO fame began in 1952 with reports of a spaceship-riding creature at Flatwoods, West Virginia. Barker's interviews with witnesses, written in *faux* objective style, appeared in *Fate* (Barker 1953). He soon became chief investigator for Albert K. Bender's International Flying Saucer Bureau.

In 1953 Bender dissolved the fast-growing group, blaming unidentified commands. The puzzled Barker sifted through Bender's story and similar tales, producing one of UFOlogy's classics, *They Knew Too Much About Flying Saucers* (Barker 1956). Barker's prose gave Bender's story sufficient credibility to sustain an urban legend: Strange aircraft are observed, but, after black-clad men step from their huge auto, the witnesses clam up. In the 1980s Lowell Cunningham turned the tales into comic-book fiction, thus inspiring the *Men in Black* movies (Westcott 1993).

My involvement in all this began in early 1967 when I sent to Barker's Saucerian Publications my juvenile chronicle of Michigan's 1966 UFO flurry, which Barker gave the fanciful yet saleable title *Flying Saucers Are Watching You.* As it was printed, the Michigan "flap" seeped across Ohio into West Virginia, where began an eighteen-month series of reports of a flying creature popularly dubbed "Mothman."

Then came tragedy. The 700-foot Silver Bridge at Point Pleasant, West Virginia, collapsed during rush hour December 15, 1967 (the film of *The Mothman Prophecies* moves the event to Christmas Eve in the present day). Some area residents saw a link between the catastrophe, which took forty-five lives, and the apparitions. It was a notion Barker would borrow and Keel would reiterate.

Soon after, I committed my only journalistic crime. Encouraged by Barker, I wrote two articles for Barker's *Saucer News* "exposing" time-traveling UFOnauts, using the pseudonym Dr. Richard H. Pratt. When Barker reprinted the hoax in 1983, I remained silent. On Barker's death I considered the joke over, but guilt revived a decade later with *Men in Black*'s release.

I exorcised this personal demon by writing "Gray Barker: My Friend, the Myth-Maker" for the SKEPTICAL INQUIRER (Sherwood 1998). A former acquaintance soon reintroduced himself. James W. Moseley, Barker's friend since 1954 and *Saucer News*' first publisher, said Barker's death had unlocked his own lips: "The public has the right to know how many UFO hoaxes there are, how easy they are to perpetrate, and what this shows about the gullibility of the UFO field" (Moseley 2001). In early 1985, Moseley had begun a series of revelations about Barker in a newsletter, *Saucer Smear.* (A book by Moseley and Karl T. Pflock, *Shockingly Close to the Truth!*, has just been published by Prometheus Books.)

"[Barker] pretty much took all of UFOlogy as a joke," Moseley told me. "I did also, on one level, but I always believed there was something real going on, behind all the nonsense, and I still do."

John C. Sherwood of Pennsylvania, a reporter and editor for Gannett Co. newspapers for twenty-eight years, has written interactive mysteries and books on magic. Contact him at jcsherwood @kennett.net or MysteryVisits.com.

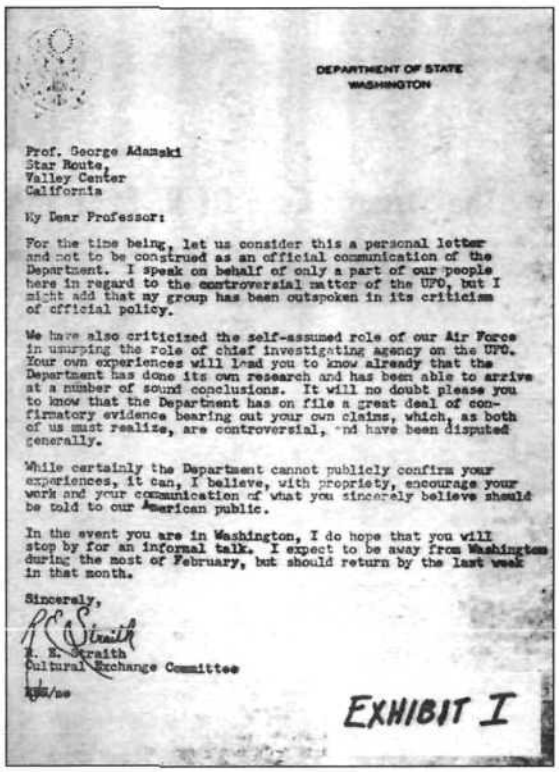
Barker died after "the more or less simultaneous failure of various organs, due most probably to AIDS (though it was not diagnosed as such in those days)" (Moseley 1998). The suspicion is restated in filmmaker Ralph Coon's documentary about Barker, *Whispers from Space*. The film depicts Barker as a closeted gay man who adored movies and fantasy, dressed as monsters and spacemen to scare kids, held fans at a distance, boozed heavily, and sold books chiefly to help his family.

Barker's sister Blanch quoted him as having justified his UFO interest financially: "There's good money in it," he'd told her. Moseley said Barker actually "did not believe in UFOs as an objective entity" but wanted "to please his audience" and tried "to keep the UFO field alive during slack periods" (Coon 1995).

Barker hawked his books and magazines by embellishing stories and encouraging others to fabricate more. He launched hoaxes, joined others' deceptions, and manipulated people's beliefs.

Surreptitiously, Moseley and Barker had obtained blank U.S. State Department stationery. After "we had a bit to drink" in 1957, they concocted a message to "contactee" George Adamski, whose book *Flying Saucers Have Landed* had related chats with Christ-like extraterrestrials. Adamski thus received an official-looking letter from "R. E. Straith" aiming to "encourage your work" (Coon 1995, Moseley 1998). Much of Barker's book on Adamski focused on the letter as "one of the great unsolved mysteries of the UFO field" (Barker 1967).

About 1966, Barker helped Moseley create the "Lost Creek, West Virginia, UFO film." A hamburger-sized ceramic chunk resembling saucers Adamski claimed he'd ridden was dangled from a pole and filmed against the sky. During college lectures, Moseley presented the film as authentic (Coon 1995, Moseley 1995, Moseley 2001).



DEPARTMENT OF STATE
WASHINGTON

Prof. George Adamski
Star Route,
Valley Center
California

My Dear Professor:

For the time being, let us consider this a personal letter and not to be construed as an official communication of the Department. I speak on behalf of only a part of our people here in regard to the controversial matter of the UFO, but I might add that my group has been outspoken in its criticism of official policy.

We have also criticized the self-assumed role of our Air Force in usurping the role of chief investigating agency on the UFO. Your own experiences will lead you to know already that the Department has done its own research and has been able to arrive at a number of sound conclusions. It will no doubt please you to know that the Department has on file a great deal of confirmatory evidence bearing out your own claims, which, as both of us must realize, are controversial, and have been disputed generally.

While certainly the Department cannot publicly confirm your experiences, it can, I believe, with propriety, encourage your work and your communication of what you sincerely believe should be told to our American public.

In the event you are in Washington, I do hope that you will stop by for an informal talk. I expect to be away from Washington during the most of February, but should return by the last week in that month.

Sincerely,

R. E. Straith
Cultural Exchange Committee

EXHIBIT I

A copy of the fraudulent "Straith Letter" to George Adamski, created by Barker and Moseley.

John Keel and Mothman

Now enters John Keel, a New York freelance writer and Fortean expert who still writes for *Fate* (not to be confused with the made-up *Washington Post* reporter portrayed in the *Mothman* film). Keel had gained attention for his articles in *Science Digest, Saga, True*, and *Playboy*, and a book about Eastern mystics, *Jadoo* (1957). He'd even invented the abbreviation "M.I.B.," shorthand glorified by *Men in Black* in 1997.

A critical survey of the 1966–67 Mothman reports is beyond this article's scope [but see "'Mothman' Solved!" by Joe Nickell, SKEPTICAL INQUIRER, March/April 2002], yet it can be shown that Barker's cavalier influence undermined Keel's account. What's disturbing is how poised Keel appears to have been for the deceptive antics of Barker and others interested in perpetuating a mythology of weirdness.

In *The Mothman Prophecies*, Keel painted Barker in guardedly flattering terms: "The diehard fanatics who dominated sauceriana during the early years were a humorless lot and Gray's mischievous wit baffled and enraged them. At times it baffled me, too. This towering bear of a man was very hard to 'read.' But his investigations were always thorough and uncompromising" (Keel 1975).

In private, however, Keel regarded Barker and Moseley as inept investigators and hoaxsters, an attitude substantiated by the men's correspondence filed at Clarksburg-Harrison Public Library in West Virginia.

Keel's insight into Barker began with events surrounding the Congress of Scientific UFOlogists in June 1967. Moseley had organized the New York event, including Barker among UFO celebrities he'd booked. Keel was to be honored as "UFOlogist of the year." Barker's jaundiced view of the event emerged in a letter to me. Punning on Adamski's title, he suggested another name: "Lying Saucerers Have Banded" (Barker 1967). Indeed, the lies soon began.

Keel recorded a phone call June 11 "from a middle-aged woman who said she was Princess Moon Owl. . . . [who] sounded like a man faking an Aunt Jemima accent. . . . [After the tape aired on WBAB radio,] Long Island's lunatic fringe went wild with joy. At last a genuine space person was in their midst. . . . The most suspicious things of all were her transparent references to a major UFO convention scheduled to be

held that June 24 in New York's Hotel Commodore. James Moseley . . . was staging press conferences and radio and television appearances to promote his investment. Princess Moon Owl seemed to fit too neatly into the publicity campaign" (Keel 1975). Moseley has denied initiating these calls, insisting the publicity would have helped others also (Moseley 2001). Whoever actually began these calls, though, established a pattern on which Barker would build.

Mysterious Phone Calls

Keel wrote in *Mothman* that, three weeks after the "congress,"

> At 1 A.M. on the morning of Friday, July 14, 1967, I received a call from a man who identified himself as Gray Barker from West Virginia. The voice sounded exactly like Gray's softly accented mellifluous own, but he addressed me as if I were a total stranger and carefully called me "Mr. Keel." . . . [H]e had just heard about a case which he thought I should look into. It was, he said, similar to the Deren*stein* case. Gray and I had visited Woodrow Derenberger together so I knew this was not the kind of mistake he would make. . . .
>
> I had received a number of reports from people in the New York area who had been receiving nuisance calls from a woman who identified herself as "Mrs. Gray Barker." I knew that Gray was not married but when I mentioned these calls to this "Gray Barker" he paused for a moment and then said, "No, Mrs. Barker hasn't been calling anybody up there." . . .
>
> "Gray" sounded like a man under duress . . . as though someone was holding a gun to his head. I tricked him several times with different meaningless references and by the time I hung up I was definitely convinced that this man was not the real Gray Barker. . . . The next day I called Gray long distance and he denied having placed the call, naturally (Keel 1975).

James W. Moseley (left) with David Houchin, historian in charge of the Barker Collection and other materials relating to West Virginian authors. Photo by John C. Sherwood.

In April 2001, Moseley insisted he'd had no prior knowledge of the call, but added, "Knowing Gray, he was probably drunk" (Moseley 2001).

Perhaps trying to provoke a confession, Keel told Moseley three days after the call that "these calls are part of a pattern which has been carefully planned by an individual or a group of individuals. Their eventual aim is to discredit my research or to involve me in some kind of a 'frame up.' . . . Extensive and detailed records of my current research, giving names, dates, etc., have been stored in a safe place and trusted friends have access to those records. Should I be arrested, murdered, or disappear, these records should immediately be examined and placed in the hands of a competent lawyer."

Keel added: "Please file the attached material in a safe place. If anything should happen to me, then print it. When you see Gray, give him the whole story and try to determine if he is involved in any way. I don't think he is. . . . If, by any chance, any of your cronies are planting occasional hoax calls . . . get them to stop it. They will be needlessly involving themselves in a situation that could cost them their sanity or even their lives (Keel 1967)."

This letter is still in Barker's files, indicating Moseley had shared it. The "attached material" was a four-page account of the July 14 call. In this version, the "wife" was "Mrs. Gray Baker" in every reference. Why she became "Barker" eight years later in *Mothman* is unknown—despite attempts to obtain clarification from Keel.

Keel asked Barker August 18: "Gray, can you account for where you were and what you were doing at the time I received that odd phone call. . . ? Do you suppose that there's any chance that you could have made that call without conscious knowledge of doing so?" (Keel 1967)

Barker told Keel September 23 he'd been in his apartment July 14: "The weird thing, is, though, that my telephone bill does show a dialed call to you on the 14th (See [photo]stat of phone bill). A local hoaxter [*sic*] could very easily call up person to person and give my number to the operator, but this would be difficult or impossible to dial. This has me almost believing that I *did* make the call! I just don't get drunk enough to not remember having made calls. . . . Maybe you can figure this one out. I can't" (Barker 1967).

Barker had been in Clarksburg at the time of the call, so Keel would have called him there next day. But only if *The Mothman Prophecies* is accurate. The book's scenario leaves no cause for Keel's August 18 request. None of Barker's letters reminds Keel they'd spoken again a few hours later. Keel's own initial account mentions no follow-up. Thus *The Mothman Prophecies* takes on the feel of a misremembered diary.

Keel told Barker October 7, "threatening phone calls were made to an individual on Long Island in your name. This individual (I must withhold the name because he is in grave danger) received a visit from the MIB. . . . Gray, this is an extremely serious business and these people play for keeps. I know for a fact that the MIB are active in West Virginia and have been seen several times in a large black car bearing Pennsylvania license plates. So watch your ass down there" (Keel 1967).

Barker responded by blaming hoaxsters. Keel's next three letters came at two-day intervals, decrying Moseley's "trickery" and "unsavory techniques," the use of which "merely

muddies your reputation and adds to the confusion." Keel wrote October 24: "In 1968, there will be ten male births to every female. This trend spells genocide within two generations. In addition, there has been a sharp increase in fluoride poisonings. . . . Thousands of 'silent contactees' are being suckered into the biggest con game in history" (Barker and Keel 1967).

In a disturbingly manipulative response October 29, Barker recalled

> [Y]our remark that you felt that the MIB, etc., might be programmed robots or androids of some sort—or beings under remote electronic control. I hesitate to go into this, for there is always the possibility that *you yourself* may be consciously or subconsciously serving these forces. There is a method which I have used which have kept me relatively unbothered by the *MIB syndrome. . . . These methods, by which so far both* myself and JWM [Moseley] have not been really "bothered," have something to do with our behavior over the past few months. . . . [T]his "method" has something to do with upsetting the *modis* [*sic*] *operandi* (sp?) of a "program," whether it be on a computer or whatever. . . . I was convinced that you would be the next victim of a "shush-up." But due to information reaching me since that time, I believe you are finding the ways and means of resisting such an eventuality (Barker 1967).

Keel resisted the bait, replying November 2: "I regard the letter as another hoax. . . . Did you expect me to believe that you and Jim were undercover agents? Let's stop all this happy horseshit" (Keel 1967).

Moseley, then *Saucer News*' owner, in November distributed Barker's version of the July call, in which Barker denied responsibility and repeated the android hokum: "If the reader is ever confronted by one of these strange people . . . Don't respond in fear. Most important, make some sort of joke! . . . If you throw off their programing [*sic*], they will be 'short-circuited,' so to speak, and will probably run screaming into the night or fade out like a motion picture would do" (Moseley and Barker 1967).

Recalling this episode, Moseley wrote to me, "Gray was delighted that Keel was reporting all sorts of 'persecutions' and paranoia" (Moseley 2001).

Keel now suspected Moseley had made hoax calls to UFO enthusiasts in Florida and Texas. He urged Barker to "hammer some sense into Moseley" (Keel 1968). But Barker was a bad choice for this honest task. About that same time he was urging me to write "a spellbinder article by Dr. Pratt. . . . We probably could fool the [1968 UFO] Congress on this too" (Barker 1968).

Mixing Fact and Fiction

Keel and Barker now toyed with collaboration on a Mothman book. Barker, who had done little firsthand research, accepted Keel's offer to share notes. Barker then wrote rough chapters, which he sent to me. After my favorable review, he sent his thanks and added, "I have deliberately stuck in fictional chapters based roughly on cases I had heard about. Throughout the fictional chapters is an undertone which explains the sightings from a psychological viewpoint, though this is never stated" (Barker and Sherwood 1968).

Barker said of his Mothman book: "I have deliberately stuck in fictional chapters based roughly on cases I had heard about."

Barker sent Keel a rough chapter describing Keel's first foray into West Virginia. Keel objected to "being turned into some kind [of] 'mysterious' character'" and provided a rewrite (Barker and Keel 1968). Keel recalled this episode in one of his first messages to me in early 2001: Barker's books had been laced with fiction, he said. He'd been appalled by Barker's proposed chapter about him and his rewritten version probably was the finished book's only honest segment. He'd written *The Mothman Prophecies* to clear the record (Keel 2001).

A display case in the Gray Barker Collection exhibits copies of Barker's magazine, *The Saucerian*, as well as the ceramic UFO model used in the fraudulent "Lost Creek UFO" film created by Barker and Moseley. The plastic model in the background was used to recreate the film in Ralph Coon's documentary *Whispers from Space*.

On March 15, 1969, a rift opened with Keel's letter referencing a "Mothman Convention" Barker had held the previous Labor Day at Point Pleasant, West Virginia:

> It is absolutely inexcusable that none of you bothered to interview *a single witness*. . . . Instead, you, Moseley, . . . et al. engaged in a typical buffery "investigation." You went down there and looked at the sky two years after the main incidents had occurred. This was tourism, not investigation, Gray. . . .
>
> I made every effort to cooperate with you characters and devoted a lot of valuable time to writing for the various fan magazines. I have been repaid by groundless gossip, rumors, and maniacal nonsense. You and Moseley are directly responsible for much of it. It is little wonder that the subject has acquired such a disreputable aura. I don't pretend to understand your motivations but I do wish you would adopt a more mature approach to the situation (Keel 1969).

Apparently abashed, Barker no longer sought Keel's help. *The Silver Bridge* ended up on a private press and focused on

Richard Gere in the 2002 film *The Mothman Prophecies*.

few cases. In it, the phone call to Keel went ignored—a remarkable omission unless Barker knew it *wasn't* inexplicable.

In 1970, Barker wrote to me, "the kookie books are about all that I can sell these days. . . . I lost the 'sensible' subscribers to SN [*Saucer News*] long ago, so I get a kick out of letting it reflect the utter mental illness of the field." Barker soon sent a copy of *Bridge* to me. Keel, however, didn't get one. In fact, Keel waited three years before requesting a copy (Keel 1973). After the book arrived Keel told Barker, "I may quote a few lines in my new opus and spread your fame" (Keel 1974).

In *The Mothman Prophecies* Keel summarized Barker's work and presented him as a "player." But Barker's own book went unmentioned. Barker didn't complain. Their correspondence over the next decade was cordial. Before Barker died Keel even sent a get-well card.

The more intriguing of the two books is *Mothman*, which goes far beyond Barker's treatment of the anecdotal accounts. Keel perceived a "large and well-financed organization" involving "ultraterrestrials" manipulating humanity's perceptions and behavior. He outlined ominous activity ranging over decades, tied to political assassination and fostering "the worldwide spread of the UFO belief and its accompanying disease" among a confederacy of duped contactees: "In their meetings with the entities they are served up platters of propaganda along with rumors and nonsense which they accept and repeat as fact" (Keel 1975).

After initial e-mail exchanges in early 2001, I approached Keel repeatedly to (a) clarify whether he still held such opinions, (b) resolve the contradictions between his book and his letters, and (c) determine whether he still believed someone other than Barker made the July 1967 phone call. Keel replied that eye surgery kept him from reading my questions. Over subsequent months my questions were surface-mailed twice and e-mailed twice more. No answers have been received.

A year before Barker died he squeezed more cash from an old hoax, restating my "Pratt" nonsense in *M.I.B.: The Secret Terror Among Us*. Unsolicited, he sent me a copy. As I scan it today, I'm reminded of a poem Moseley passed on to me (Coon 1995, Moseley 2001), with the explanation that Barker had written it in the late 1950s:

UFO is a bucket of shit
Its followers
Perverts
Monomaniacs
Dipsomaniacs
Artists of the fast buck. . . .
And I sit here, writing,
While the shit drips down my
Face in great rivulets.

I wonder whether Gray carried this hint of remorse to his grave. Maybe he consoled himself with the fun he'd had chasing monsters and goading others to pursue his creations. Sure, today's moviegoers will enjoy his otherworldy offspring. But those who hunt for any truth about them will find the path littered with deceitful diversions and fraudulent road signs plastered with his fingerprints.

Acknowledgments

Thanks go to David Houchin, historian and genealogist who supervises the Gray Barker Collection at Clarksburg-Harrison Public Library, Clarksburg, West Virginia; James W. Moseley for his aid and candor; Ralph Coon for his invaluable film; Don Roberts of Vinita, Okla., for information on Lowell Cunningham; Karl T. Pflock for his corrections; and my wife, Katäri Brown, for her flattery and love.

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The King of Quacks: Albert Abrams, M.D.

One of the greatest quacks of all time was Albert Abrams, M.D. Abrams earned the dubious distinction of "the dean of twentieth century charlatans" by the American Medical Association.

J.D. HAINES, M.D.

The physician is the most convincing of all quacks. He has both the knowledge and the authority to promote his claims, no matter how outlandish. In the history of physician-quacks, the undisputed king is Dr. Albert Abrams. This Stanford professor was given the dubious distinction as the "dean of twentieth century charlatans," according to the American Medical Association in 1924 (Cramp 1936).

Quack is short for quacksalver, which means one who "quacks," or makes a loud noise, about a remedy, such as a salve (Randi 1995). The requirements for a convincing quack are threefold. First, he must pretend to have knowledge of some remarkable medical remedy. Second, he must

be a convincing liar. And finally, he must have a gullible victim. As Benjamin Franklin once said, "There are no greater liars in the world than quacks—except for their patients" (Randi 1995).

Even though history has revealed multitudes of charlatans, their victims often remain their most ardent supporters. Hope, and the desire to believe, are powerful forces that quacks exploit to great advantage. While many today laugh at those who fell victim to Dr. Abrams's ridiculous methods and treatments, the spirit of his work is still alive and well. The story of how Abrams achieved the title of the dean of American quackery is a fascinating tale.

Abrams claimed he could revolutionize the field of diagnostics. The system worked like this: a drop of blood on a piece of paper, a piece of preserved tissue or even a handwriting sample, or photograph from the diseased person was all that was needed to yield a diagnosis

Abrams began his career in the conventional way, obtaining a medical degree at the early age of twenty from the University of Heidelburg in 1882. He pursued postgraduate studies in Berlin, Paris, Vienna, and London before returning to his native San Francisco.

Little is known of his childhood, however E.W. Page wrote in 1939 that Abrams's parents instilled in him a desire to dominate others by intellectual achievement. Abrams came to feel that that he was destined to become a sage, or even a prophet, and to possess both wealth and power (Bailey 1978).

Albert Abrams

In 1893 Abrams accepted the position of Professor of Pathology at Cooper Medical College, the predecessor of Stanford University. Early in his career, he began writing and publishing on a wide range of medical subjects, including textbooks on clinical diagnosis and cardiology. He also published several collections of essays containing references to quackery.

By 1900, Abrams began to turn increasingly from mainstream medicine to more eccentric beliefs. In rapid succession, he published *Nervous Breakdown* in 1901, *The Blues* (Splanchnic Neurasthenia) in 1904, *Diseases of the Lungs* in 1905, and *Man and His Poisons* in 1906.

In *The Blues*, he set forth his theory that neurasthenia (similar to nervous exhaustion) resulted in part from stagnation of the blood in the abdominal veins. Treatment consisted of physical exercise to strengthen the abdominal muscles. He also introduced an apparatus of his own design to accomplish the strengthening. *Man and His Poisons* contained one of the first electrical devices designed by Abrams to be used in treatment.

But his true break with conventional medicine occurred in 1910 with the publication of *Spondylotherapy*. He claimed to be able to diagnose and cure disease by a steady, rapid percussing of the spine. The California Medical Society declared the technique "a hybrid of up-stage osteopathy and chiropractic" (Cramp 1936).

A review of the technique was critical, but Abrams cleverly twisted the wording to make it an endorsement, which he then featured in advertising. The book was popular with the public, rapidly selling through five printings. Abrams embarked on a lecture tour, charging $200 to teach spondylotherapy to anyone willing to pay the fee.

Several years later, Dr. Morris Fishbein of the American Medical Association wrote, "Apparently having percussed the back to the fullest extent of what it would yield monetarily, Dr. Albert Abrams turned the patient over and began to percuss the abdomen" (Fishbein 1927). His new system, however, was much more complex and capitalized on America's fascination with radio and the invention of new gadgets.

Electricity had provided a tremendous boost to quackery. In the early twentieth century, America became hooked on radio. Abrams pronounced, "The spirit of the age is radio, and we can use radio in diagnosis" (Abrams 1925). In 1917 Abrams published his electronic theory of diseases, called "Electronic Reactions of Abrams," or E.R.A., inaugurating one of the most famous cults of all time.

E.R.A. proposed that the human body possessed a characteristic rate of electronic vibration in health and disease. By measuring altered vibratory rates, the type, severity, and location of any disease could be determined. These vibratory rates were measured by an instrument invented by Abrams, the dynamizer.

By linking the dynamizer to a series of other machines, Abrams claimed he could harness the new force, which would revolutionize the field of diagnostics. The system worked like this: a drop of blood on a piece of paper, a piece of preserved tissue or even a handwriting sample, or photograph from the diseased person was all that was needed to yield a diagnosis.

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Each of these samples supposedly possessed the vibratory rate of the diseased person.

The sample was place in the dynamizer, causing emanations to pass through a series of machines; a rheostat dynamizer, a vibratory rate rheostat, a strain rate rheostat, a measuring rheostat, and finally a proximal electrode. The proximal electrode was connected to the forehead of a healthy subject, called a reagent, who was usually an employee of the laboratory.

Abrams insisted in special conditions to ensure the accuracy of the testing. It was necessary that the room be darkened during testing. It was also imperative that the reagent be facing west, with his feet resting on ground plates and his arms held out to his side to prevent "shorting out." The reagent also had to be first treated with a horseshoe magnet to remove any extraneous vibrations.

The apparatus could be adjusted to various settings corresponding to different diseases. At each setting, the Abrams practitioner would percuss the reagent's abdomen to determine the areas of dullness. By changes in the areas of dullness at different settings, the diagnostician could deduce the diseases affecting the person who provided the sample (Bailey 1978).

Some of the most frequent diseases diagnosed were syphilis (euphemistically called diminished resistance), tuberculosis, and cancer. Many apparently healthy persons were commonly found to have multiple serious ailments. But fortunately for them, the amazing Dr. Abrams had devised a new instrument that could provide a cure, the oscilloclast.

The oscilloclast was simply set to the vibratory rate of the disease to be treated, and a cure would result. The treatment was likened to shattering a wine glass by sound vibrations (Bailey 1978).

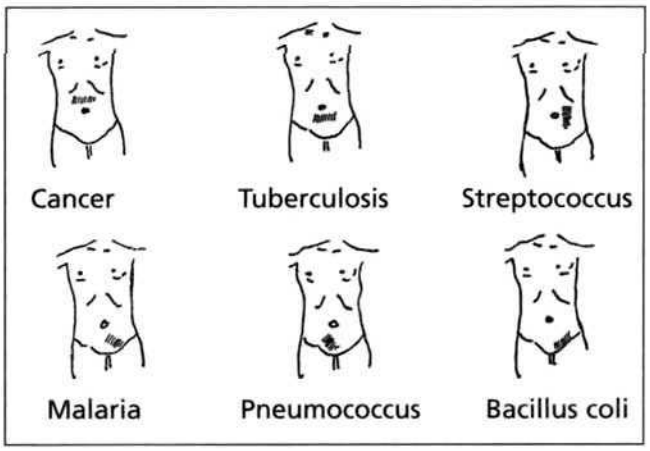
E.R.A. was reportedly so sensitive that it not only diagnosed the specific disease, but also the location within the body. The sex of the patient could be determined, and if female, whether or not the patient was pregnant. Most remarkably, the individual's religion could be detected according to areas of abdominal dullness to percussion. In the September 1922 issue of his journal, *Physico-Clinical Medicine*, Abrams printed a chart showing characteristic areas of abdominal dullness for Catholics, Seventh Day Adventists, Theosophists, Jews, Protestants, and Methodists.

Dr. Abrams placed a drop of blood from one of his patients into a "dynamizer" to determine the vibration frequency of the afflicting disease, and then used an "ocilloclast" to duplicate those vibrations in order to neutralize that disease.

The popularity of E.R.A. was greatly enhanced by a series of articles in *Pearson's Magazine*. Well-known author Upton Sinclair became an ardent advocate of E.R.A. after visiting Abrams's laboratory in San Francisco. Sinclair, a socialist and dreamer, was fascinated by Abrams's techniques and easily duped. *Scientific American* wrote of Sinclair's recommendations: "His name carried a brilliant and convincing story to the masses, who quite overlooked the fact that Sinclair's name meant no more in medical research than Jack Dempsey's would mean on a thesis dealing with the fourth dimension or Babe Ruth's on the mathematical theory of invariance" (*Scientific American* 1929).

Sinclair, who also believed in psychics and other paranormal phenomena, added E.R.A. to a long succession of fads to which he gave his outspoken allegiance.

Physicist Robert Millikan said, "They are the kind of devices a ten-year-old would build to fool an eight-year-old."



Examples of diagnoses that Albert Abrams would provide to his patients.

While Abrams sold his diagnostic devices, he would only lease the oscilloclast. In addition to paying a healthy fee ($200 to $250 initially, then $5 per month), the lessee had to agree by contract never to open the apparatus, which was hermetically sealed. Some did, however, and found a weird jumble of ohmmeters, rheostats, condensers, and other parts wired together in an incomprehensible manner.

Physicist Robert Millikan said, "They are the kind of devices a ten-year-old would build to fool an eight-year-old" (Young 1967). Physician Walter Alvarez tracked down the electrician who was producing the oscilloclasts. The electrician shamefully admitted that he was "prostituting" himself, but said the pay was irresistible.

As the popularity of Abrams's method increased, practitioners from all over the country flocked to San Francisco to learn from the master. A four-week course in electronic medicine cost $200. A past president of the British Medical Association, Sir James Barr, was recruited on the continent to help spread the word. E.R.A. even achieved legal standing when a judge accepted Abrams's opinion in a paternity

suit based on the "electronic vibrations" of the alleged father's blood sample.

It is estimated that 4,000 electronic machines "authorized by Abrams" were manufactured. By mid-1923, more than 3,500 machines were in operation. According to one estimate, lessees found the Abrams machines a gold mine, bringing in from $1,000 to $2,000 per week (Holbrook 1959).

E.R.A.'s tide of popularity prompted the American Medical Association and the journal *Scientific American* to initiate investigations. The Association's journal concluded, "The absurdity of the E.R.A. was demonstrated at various times by sending some of Abrams's disciples specimens of blood purported to be from patients who were ill but were actually taken from animals" (Holbrook 1959). One blood sample from a sheep was diagnosed as hereditary syphilis and an E.R.A. practitioner wrote back offering a cure for $250 (Holbrook 1959).

Another sample of sheep's blood accompanied by the history of a fifteen-year-old boy revealed a diagnosis of congenital syphilis, metastatic carcinoma of the left lung and pancreas, Neisserian infection, and tuberculosis of the genitourinary tract. A cure was offered for $250 (Bailey 1978).

Drops of chicken blood and even red ink were submitted to Abrams's practitioners, revealing seemingly terminal diagnoses, yet the prognosis was always favorable, if treated with the amazing oscilloclast and the accompanying $250 fee.

Scientific American embarked on an ambitious campaign against E.R.A., resulting in a series of twelve articles from October 1923 to September 1924. *Scientific American* concluded that E.R.A. was the work of a mastermind, writing, "It is far more intricate and ironclad than medical fads of the past. It deals with a new form of energy . . ." (*Scientific American* 1929). And, "At best it is an illusion; at worst it is a colossal fraud" (*Scientific American* 1929).

Writer David M. Barley explained the E.R.A. phenomenon, "Indeed radio was new and poorly understood by the public. The prospect of using it to diagnose and cure disease in an easy and painless way, without the use of unpleasant drugs or surgery, must have seemed attractive to a gullible public" (Bailey 1978).

Another article said that Abrams's machines had "forced the chiropractors to bring out their piece of mechanical hocum, the Neurocalometer, in order to meet the competition of the osteopaths with their Oscilloclasts and other Abrams magic boxes" (Cramp 1936).

Dr. Abrams died suddenly from pneumonia at age sixty in 1924, just as serious doubts about his methods were becoming widespread. At the time of his death, Abrams's estate amounted to over $2 million, a testament to the gullibility of the public and the greed of those who should have known better. James Young said this about the gadget boom in quackery:

> Device quackery preyed upon the same widespread credulity, fear, and desperation which permitted all other forms of quackery to flourish. Gadgets could possess certain kinds of persuasiveness denied to drugs. One was the power to shock. A New York "clinic" early in this century treated young men who were led to believe they might be suffering from syphilis or the dire consequences of self-abuse. The patient sat naked on a sort of toilet throne, his bare back resting against a metal plate, his scrotum suspended in a whirling pool. The plate and pool were linked by wire to a battery. No frightened sufferer could question the rigor of the therapy (Young 1967).

Quacks had good success in promoting their devices as drugless forms of therapy. The public was well aware of the many side effects, sometimes fatal, due to some pharmaceuticals. In his book *The Golden Age of Quackery*, Stewart Holbrook summed up the history of device quackery as follows:

> One would like to know what became of all that imposing mass of machinery. I like to think that, somewhere or other, in the attic of a house that has belonged to four or five generations of a dedicated faddist family, there is grouped a now dusty and rusting display of the mechanical nostrums which, periodically over the years, have brought temporary comfort and hope to their users.
>
> In this museum of obsolete therapy the oldest exhibit would of course be a pair of Dr. Perkins's Metallic Tractors; and surely one of Dr. Raphael's Famous Electro-magnetic Chains, "endorsed by Prince Albert of England." There must be a collection of the patented works of Dr. Hercules Sanche, the Discoverer of the laws of the Spontaneous Cures of Disease, which began with his basic Oxydonor, and flowered into the elaborate attachments known as the Animator, the Novora, the Binora and the Vocorbis. There would have to be a copy of Dr. Charles A. Tyrell's *J.B.L. Cascade, The Internal Bath of the Continuous Good Health;* and perhaps several unmentionable devices, patented or otherwise, which had come in Plain Sealed Wrappers from mail-order houses with names like the Ponce de Leon Appliance Company.
>
> Then within reach of an electric socket would stand the wonderful showcase of Dr. Abrams, a complete Electronic Assembly, its levers, buttons, and flashing lights reminding one today less of therapy than of a small size computer . . ." (Holbrook 1959).

Even with such colossal frauds as E.R.A., the public continues to fall prey to new forms of quackery. Magician and debunker James Randi has said that the climate for quacks has never been better in the United States. "Political and legal considerations," says Randi, "have prevented open discussion or even questioning of procedures that are clearly without merit. The highly litigious nature of American society has effectively provided the quacks with protection, and the public suffers because it cannot afford to defend itself and politicians for censure" (Randi 1995).

As the old saying goes, if it sounds to good to be true, it probably is.

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Living Legends

BENJAMIN RADFORD

Aliens, Ghosts, and Cults: Legends We Live. By Bill Ellis. University of Mississippi Press: Mississippi, 2001. ISBN 1-57806-325-6. 272 pp. Hardcover, $38.

Aliens, Ghosts, and Cults, by Bill Ellis, reminds us that legends surround us, and much of the time we don't even know it. Ellis should know; he's an associate professor of English and American Studies at Pennsylvania State University. The book is divided into three parts. The first discusses the characteristics of legends: what makes a legend, when a legend is considered traditional or contemporary, and the different ways one can approach and analyze legends. The second section, titled "Life as Legend," examines a ghost seen at a Pizza Hut (!), a variant of the "vanishing hitchhiker" urban legend, and accounts of alien abductions as legend. "Legend as Life," the third and most fascinating section, discusses how people engage in *ostension*, the acting out of legends. This includes playacting horror campfire stories, ritualized teenage rite-of-passage trips to "haunted" sites, and, Ellis claims, even murder.

The first quarter of the book is at times technical and somewhat academic, as Ellis explores the finer points of legendmaking and narrative. Discussions of narrative structural theories and folkloric terms such as *metonym* and *sjuzhet* are unlikely to open many doors to those not familiar with folklore. Yet readers who allow themselves to be put off by the technical discussions will miss a good book.

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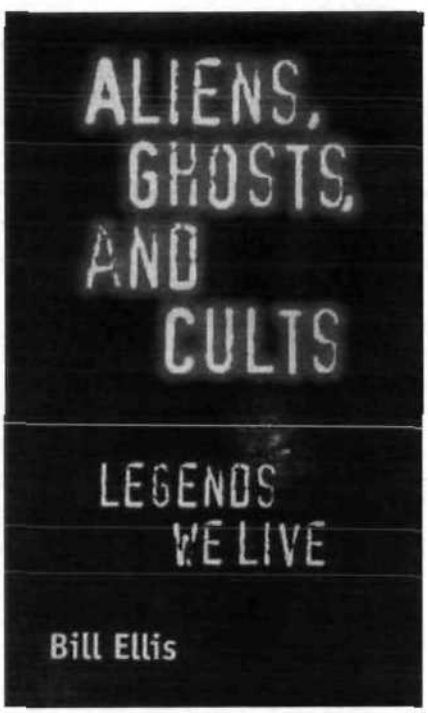
In the third chapter, Ellis points out that though many people tend to think of urban (or, as Ellis prefers, "contemporary") legends as fairly recent, they can be quite old. One example is "The Gang Initiation," the subject of Jan Harold Brunvand's March/April 1995



SKEPTICAL INQUIRER article "Lights Out: A Faxlore Phenomenon." In this legend, innocent people are killed as part of a horrific gang initiation (usually by a group of social outcasts). In the "Lights Out!" version, motorists were warned not to flash other cars whose lights are out. If they did, the helpful motorist would be followed to his or her destination and killed as part of a gang initiation. This version of the story began circulating in the early 1990s, but Ellis traces variants of this legend back to 63 B.C., having been around in ancient Rome. Only back then it was Christians who were the "gang," and the initiations were ritualized child sacrifices. These motifs linger to this day in legends surrounding satanic cults. Ellis's discussion is lucid and fascinating.

Richard Dawkins's concept of memes comes up, and, though intrigued by the theory, Ellis chides Dawkins for not consulting folklorists in the development of his ideas. A chain letter Dawkins sees as an example of a "mind virus" Ellis regards instead as a legend. He writes, "I will from this point on call 'memes' by their proper name, which is folklore, and 'mind viruses' by the more objective and academically established name, which is 'contemporary legend'" (83).

Some of Ellis's analyses, though thorough, seem a little muddled and somewhat belabored. The eight pages he devotes to a transcription of an interview with a former manager of a supposedly haunted Pizza Hut, for example, seems excessive. I understand the need to read the comments in their proper narrative context, but it might have read better had it been presented as an appendix.

In chapter eight, "The Varieties of

Alien Experience," Ellis examines the case of Whitley Strieber, a novelist who claimed to have had contact with aliens. Strieber wrote about them in his 1987 best seller, *Communion*, and Ellis examines the text from a folkloric perspective. Writes Ellis, "[I]t is difficult to see Strieber's account for exactly what it is, because many readers see the details he represents in the light of their own belief-languages" (142). He criticizes several reviews of Strieber's book, including one in the SKEPTICAL INQUIRER by Ernest Taves (12[1] Fall 1987), in which he claims Taves dismisses Strieber as "either mentally ill or he is consciously perpetrating a hoax" (143).

A reading of the original review, however, tells a somewhat different story. Taves does not write that Strieber is either hoaxing or mentally ill. He writes that "we need to consider the possibility that the book is a hoax" (an appropriate and logical *possibility* given the book's fantastic story), and in fact Taves finishes his review with four hypotheses regarding *Communion*, the first two of which conclude that "Strieber's experiences are 'real.'" He does not favor them, but he does offer them to readers as possibilities. This flies in the face of Ellis's depiction of dogmatic skeptics who reject Strieber's narrative out of hand as a lie or delusion.

The real difference here is that Ellis is a folklorist, and Taves a psychiatrist. These are different approaches, with different standards of evidence. As Ellis himself notes (quoting a colleague), "The folklore scholar is fortunate inasmuch as he need not concern himself with the question of the existence or nonexistence of paranormal phenomena." From a folkloric point of view, urban legends are descriptive narratives and as such are neither correct nor incorrect. But at the point in which the legends (e.g., Strieber's claims) make verifiable, real-world claims, the skeptic is justified in taking the claims literally and investigating whether they occurred or not. Without proof, concluding that Strieber's experiences were "subjectively real" is fine, but it leads nowhere.

The reviews, say Ellis, miss the point because they "claim that *Communion* describes Strieber's contact with aliens. It does not. The book in fact is . . . an attempt to 'tell' an ungrammatical experience, an experience for which there is a limited cultural belief language" (143). Ellis makes an important and interesting point, that "Legends, whatever else they are, are accounts of ambiguous experience, events that normal 'factual' concepts cannot contain." Strieber may have had some undescribable, subjectively real experience, and the closest he could come to describing it was using "belief language" borrowed from UFO/alien milieu.

It may be true that Strieber did not settle on alien contact as the only possible interpretation of his experiences, but Ellis can hardly fault skeptical reviewers for latching onto the UFO interpretation when Strieber and UFO buffs heavily emphasized that angle.

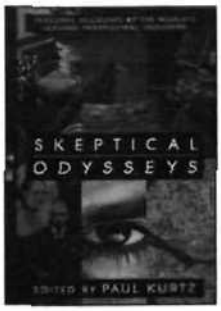
Ellis's third section on legend as life is the most valuable and interesting part of the book. It is an outstanding analysis of how people can draw elements from the narratives and legends in their communities and act them out. This is the case of *ostension*, which "is present whenever someone creates such 'found narrative' out of real life or whenever someone creates a stir by manufacturing evidence for legendary events" (161). One example is the case of Ronald Clark O'Bryan, the Texan who poisoned his son for insurance money on Halloween and tried to use the legend of poisoned Halloween candy to cover up his crime. In another case, a woman who had drowned and dismembered her infant son initially claimed that two men had kidnapped her child from a shopping center, a common urban legend.

Many of the cases Ellis cites are said to be related to devil worship. It is not surprising that the specter of satanism would feature prominently, first because as a symbol of "ultimate evil" it is invoked in many legends, and second because the topic is one of Ellis's specialties; in 2000 he published *Raising the Devil: Satanism, New Religions, and the Media.*

The satanic abuse witch trials of the 1990s resulted in dozens of innocent people being falsely accused of child abuse. Although cases of "true" satanism are virtually nonexistent, there have been some cases of self-styled satanists (the kind we in high school termed "posers") who adopt gothic clothes and listen to various heavy metal bands (many with commercialized satanism such as Iron Maiden, Marilyn Manson, and Slayer). On a few occasions (usually fueled by alcohol or other drugs) they have killed others or sacrificed animals, and Ellis states that such actions "were guided by legendary accounts of devil worship." That is, they take their cues from popular ideas of what satanic cultists do, then follow that. In this way the legends are acted out and thus come full circle.

The book also highlights the dangers of the many self-styled experts on cults and satanism who give presentations to law enforcement groups and the public. Despite the fact that they frequently have little or no training in folklore or anthropology, these experts tell people what signs indicate that a satanic group is active in their community. Such "signs of involvement" might include common objects such as fantasy or role-playing games, "occult books," black clothes, or symbolic jewelry such as pentagrams. This can in turn create or foment hysteria and panic over a nonexistent threat.

Aliens, Ghosts, and Cults is an important book because it shows how legends are not just musty old stories told around campfires, but narratives and beliefs that actively shape the way we live and the world we encounter. Legends are like intangible and subtle architects of our personal and collective views of the world. If you have forwarded chain e-mail warnings, worried over a mad slasher in a mall parking lot, or been spooked by "true" campfire stories, legends have touched your life. Yet you are one of the lucky ones; other people have spent years in jail largely due to the power of urban legends.



Autobiographies and Other Musings from the World's Leading Skeptics

ROBERT A. BAKER

Skeptical Odysseys: Personal Accounts by the World's Leading Paranormal Inquirers. Edited by Paul Kurtz. Prometheus Books, Amherst, N.Y. 2001. 400 pp. ISBN 1-57392-884-4. Cloth, $27.

Looking for ways to celebrate the twenty-fifth anniversary of the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP), founder Paul Kurtz decided to publish a commemorative volume made up of autobiographical statements and original contributions by a selected few of the world's major skeptics. The result, *Skeptical Odysseys*, is a book that anyone having a serious interest in either CSICOP or paranormal claims will be interested in. The book offers insights, illuminations, and autobiographical statements from thirty-seven well-known scientists and paranormal investigators.

Editor Kurtz asked each contributor to look back over the past twenty-five years of his or her investigatory efforts at exploring the paranormal and then to review and summarize what he or she learned. Few restrictions were placed on either content or length; this air of freedom results in a most informal and enjoyable cornucopia of recent skeptical history and the men and women who made it.

Section I, *Twenty-Five Years of CSICOP*, is headed by Kendrick Frazier's story of his personal experiences and the challenges he faced as editor of the SKEPTICAL INQUIRER for the past quarter of a century. Frazier's views on the role of SI in educating a scientifically illiterate public are inspirational and memorable. Barry Karr, CSICOP's Executive Director, provides an entertaining essay on the problems and pleasures of organizing, staffing, and managing hundreds of workshops, conferences, and seminars. CSICOP Fellow and council member James Alcock provides an overview of the current state of psi research as well as accounts of his personal struggles with parapsychology. Lee Nisbet, in his recall of the origins and evolution of CSICOP, stresses that science is too important to be left to scientists and shows us just how important a role skeptics play in science education. Editor Kurtz finishes the section with his own autobiography and his personal involvement in a number of CSICOP's major attacks and campaigns.

Section II of *Odysseys* is devoted to parapsychology and includes Susan Blackmore's review of the sorry state of psychic research and a personal account of why she has given up on ever finding anything worthwhile in the pursuit of psi. Leon Jaroff, a CSICOP Fellow and *Time* science editor, provides a memorable account of his experiences with Uri Geller, and Barry Beyerstein offers his personal history as well as a detailed account of legitimate psychology's struggles with parapsychology and New Age charlatans. The third section of the book is devoted to UFOs and includes excellent essays by Phil Klass, Robert Sheaffer, Gary Posner, and Bill Nye.

Section IV, concerned with Astronomy and the Space Age, offers us David Morrison's brilliant essay "Killer Comets, Pseudocosmogony, and Little Green Men." Morrison, one of Carl Sagan's first doctoral students, reviews the Velikovsky affair, catastrophism (i.e., evidence for and against the effects of meteor and comet collisions), evidence for and against other intelligent lifeforms in outer space, and creationism's ignorance and silliness. This section also includes Neil DeGrasse Tyson's "Certain Uncertainties," a detailed discussion of the difficulties scientists have in presenting and explaining scientific facts to the scientifically naive.

Section V, devoted entirely to astrology, includes Geoffrey Dean's and Ivan Kelly's "Does Astrology Work?," a review of astrology and skepticism from 1975 to 2000, as well as Jean-Claude Pecker's essay of the unending battle science has waged with this pseudoscience.

Popular investigations, Section VI, includes CSICOP's Senior Investigator Joe Nickell's amusing and adventure-filled autobiography and magician and entertainer Henry Gordon's "Diary of a Canadian Debunker." Gordon's encounters with some of the world's best-known psychics and true-believers make skeptics want to cheer.

Section VII, on Creationism, is a superb account by Eugenie Scott of her long and successful battle with religious fundamentalists to protect and defend the teaching of evolution as well as to expose the flaws and fallacies of their pseudoscience. Section VIII, devoted to Alternative Medicine, contains Wallace Sampson's sobering summary of how a host of medical pseudosciences managed to gain public acceptance and support when it is crystal clear they do not deserve it. Section IX, Skepticism Around the World, has contributions from the Netherlands, Italy, Mexico, Russia, India, and Spain. Each of these short entries convincingly demonstrates that the skeptical cause is alive and well, not only here but around the world.

Section X, titled Some Personal Reflections, consists of intriguing comments by distinguished sexologist Vern Bullough, Michael Shermer, editor of

Robert Baker is professor emeritus in psychology, University of Kentucky, Lexington.

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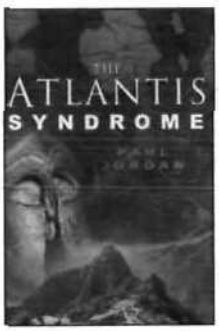
Skeptic, the late TV star and author Steve Allen, and CSICOP Fellow and Council Member Béla Scheiber. All four of these essays have important messages for skeptics. Bullough's comments about nurses and nursing, Shermer's clashes with organized religion, and Allen's incisive attack on religious dogma should be read and remembered. Memorable also is Scheiber's disturbing review of how and why many American corporations bought into the New Age nonsense. Section XI, Religion, is distinguished by the work of CSICOP co-founder Martin Gardner, physicist Victor Stenger, philosopher Antony Flew, and CSICOP Fellow Dave Thomas. Gardner gives insightful observations and comments about CSICOP's early days and the place of religion in the scheme of things. Particle physicist Stenger's "Skepticism About Religion" is aptly titled and covers the topic succinctly and well. Every skeptic familiar with Thomas's earlier detective work on Drosnin's *The Bible Code* will also enjoy this follow-up: "Beyond The Bible Code: Hidden Messages Everywhere."

Finally, Section XII traces the mental progress of yours truly from my early days as a skeptic to a concerned humanist. It also provides me with an opportunity to thank Paul Kurtz for his leadership and for *Skeptical Odysseys* which is, indeed, a fitting and most creative commemoration of CSICOP's twenty-five successful years. Let us hope the next twenty-five will be equally successful.



Diagnosing the Atlantis Syndrome

KEN FEDER

The Atlantis Syndrome. By Paul Jordan. Sutton Publishing, Thrupp, United Kingdom, 2001. ISBN 0-7509-2597-3. 308 pages. Hardcover, $29.95.

As can be seen in the Skeptic Annotated Bibliography (www.csicop.org/bibliography/home.cgi), plenty of terrific books have been published in which a skeptical approach is applied to a particular paranormal claim or "alternative" perspective of human history. These works are all quite useful and a few of them even rise to the level of "definitive statement" on a particular topic. In my own personal pantheon of quintessential skepticism, I reserve a place for Lawrence Kusche's *The Bermuda Triangle Mystery Solved* (1995). That work does not simply debunk the myth of the Bermuda Triangle, it buries it in a way that leaves the rational reader concluding: "Case closed!" In this same category I would place Joe Nickell's *Inquest on the Shroud of Turin* (1987) and James Randi's *The Mask of Nostradamus* (1993). These are not simply wonderful and useful books; they represent what amounts to the "final word" on their respective topics. Now, thanks to author Paul Jordan, I need to make room on my bookshelf for another such definitive work.

To be sure, there are many valuable books on the topic of the lost continent of Atlantis. Skeptics interested in Atlantis are obliged to seek out L. Sprague de Camp's classic work, *Lost Continents: The Atlantis Theme in History, Science and Literature* (1970). *Imagining Atlantis* (1998) by Richard Ellis and *Atlantis Destroyed* (1998) by Rodney Castleden should be on every skeptic's bookshelf as well. But the newly published *The Atlantis Syndrome* by Paul Jordan belongs in that special place on the bookshelf reserved for works that represent an authoritative treatment of a topic. Jordan has produced a book that is so well-written, so thorough, so engaging, inclusive, and unflinching, I'm just not sure anything more need be written about Atlantis. It truly is that good and the marketing cliché applies quite well here: if you read one book on the lost continent of Atlantis, it should be Paul Jordan's *The Atlantis Syndrome.*

One of my own major annoyances with people who have questioned me about the lost continent is their nearly universal error in assuming that the Atlantis described by Plato was a "perfect society." So, the argument goes, wouldn't it be wonderful if such a society actually existed, especially at a time so deeply embedded in antiquity? The assumption behind this question is a clear indication that, though they may be mightily interested in Atlantis, they have not availed themselves of the works in which Atlantis was introduced to the world; the *Timaeus* and, especially, the *Critias* dialogues of Plato. Jordan, of course, summarizes the Atlantean dialogues, but he does much more than merely disabuse actual and potential Atlantisologists of their notions of Atlantean perfection (ancient Athens, not Atlantis, is the model society in *Critias*, exemplifying the workings of a perfect polity as detailed in *The Republic*). Jordan performs the vital task of placing the *Critias* dialogue in historical and philosophical context. Jordan makes Plato's purpose clear, and it is not in conveying a true history of the world.

Too often, those who present alternative histories are criticized narrowly, and the sometimes breathtaking, indirect implications of their claims are not sufficiently addressed by skeptics. Jordan does not let the alternative historians slide by here. A major element in

Ken Feder is a professor of anthropology at Central Connecticut State University, New Britain, Connecticut. He is a CSICOP Fellow.

Jordan's skeptical response to those who would have us believe not only that Atlantis was a historical entity, but that it inspired the development of later civilizations, is supported in Chapter 6 ("Out of Africa") and Chapter 7 ("Into History"). These chapters are not about Atlantis, per se, but about what we know regarding human prehistory and ancient history. As summarized by Jordan, it is clear that we know quite a bit, but little of what we know from a vast and diverse array of evidentiary sources can be true if the Atlantis story is true. This is a vital and too often glossed-over point; alternative views of the human past should not be examined in isolation, as free-standing stories. They must be viewed in context. Every new piece in the puzzle of human history must fit into the existing mosaic that is already strongly supported by geological, archaeological, and historical data. For a new piece of that puzzle to cause us to discard or reconfigure the existing mosaic, the evidence for its validity must be overwhelming. Jordan shows absolutely that the evidence for a real Atlantis is decidedly underwhelming.

Plato's story of Atlantis takes on the characteristics of a Rorschach test, with readers encountering whatever they were hoping to find. A major part of Jordan's book focuses on the mental gymnastics some authors have exercised in an attempt to show that Atlantis was real (located in every imaginable spot on Earth), and also a cultural font, a surprisingly ancient lost civilization that inspired all of the known complex societies of the ancient world. Some writers simply cannot accept the reality that ancient Egyptians, Mesopotamians, the Maya, or Inca were responsible for the technological achievements the archaeological record rather directly indicates they were capable of, and so an external source is searched for. Atlantis, or something that sounds very suspiciously like Atlantis, becomes that source for far too many writers. Jordan disposes of their arguments with great aplomb.

In *The Atlantis Syndrome*, Paul Jordan provides the reader with a definitive treatment of Atlantis in its many incarnations and contexts. I believe Plato's best known student, Aristotle, got it exactly right when, referring to Atlantis he commented, "He who invented it also destroyed it" (as cited in de Camp 1970:17). In *The Atlantis Syndrome*, Paul Jordan destroys the myth that Atlantis was a real place with an enormous impact on the ancient world. Make room on your skeptic's bookshelf. Case closed. □

SCIENCE BEST SELLERS

Top Ten Best Sellers in **New York**

1. ***Fast Food Nation: The Dark Side of the All-American Meal***
   Eric Schlosser
   Houghton Mifflin Co.
2. ***A Beautiful Mind: The Life of Mathematical Genius and Nobel Laureate John Nash***
   Sylvia Nasar
   Touchstone Books
3. ***The Universe in a Nutshell***
   Stephen Hawking
   Bantam Doubleday
4. ***The Skeptical Environmentalist: Measuring the Real State of the World***
   Bjorn Lomborg
   Cambridge University Press
5. ***Power to the Patient: The Treatments to Insist on When You're Sick***
   Isadore Rosenfeld
   Warner Books
6. ***The Future of Life***
   E.O. Wilson
   Knopf
7. ***Salt: A World History***
   Mark Kurlansky
   Walker & Co.
8. ***Uncle Tungsten: Memories of a Chemical Boyhood***
   Oliver W. Sacks
   Knopf
9. ***Taking Charge of Your Fertility***
   Toni Weschler
   Quill
10. ***Genome***
    Matt Ridley
    HarperCollins

By arrangement with Amazon.com, March 2001.

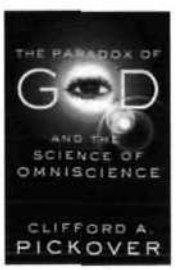
Listing does not preclude future review.

Apart from Freud: Notes for a Rational Psychoanalysis. **Jonathan Cohen.** City Lights Publishers, 261 Columbus Ave., San Francisco, CA 94133. 2001. ISBN 0-87286-378-6. 239 pp. $18.95, softcover. A practicing analyst frustrated with the fact that, in his words, psychoanalysis generally fails in its basic task of curing neurosis, undertakes an investigation exposing Freud's "specious background assumptions" in biology, sociology, anthropology, linguistics, and moral and social philosophy. Cohen augments his critique with suggestions for creating an alternative practice that challenges authoritarian traditions and fosters individual freedom and responsible action.

Demons of the Modern World. **Malcolm McGrath.** Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197. 2002. ISBN 1-57392-935-2. 290 pp. $32, hardcover. A study of modern demonology, the still-persisting fear among many that on the edges of our reality there is a world of demons trying to break in and wreak havoc and that there are people—witches, or in their modern variant, Satanists—who try to make contact with these demons and make use of their magical powers. McGrath examines the history and psychological sources of such fear. He includes chapters on the origins of the great witch-hunt, the recovered memory movement, the false memory machine, children and Satanists, dreams and madness, the road from fantasy to reality, and alien abductions.

Don't Get Duped! A Consumer's Guide to Health and Fitness. **Dr. Larry M. Forness.** Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197. 2001. ISBN 1-57392-922-0. 350 pp. $21, softcover. The founder of the National Center for Sports Medicine provides a lively consumer guide to misleading claims and incorrect information in the health and fitness fields. Opening chapters treat how and why you get duped, the scientific method and its ability to prove what is the truth, and how you can measure claims and results. Subsequent chapters treat misinformation and misleading claims about vitamins, minerals, ergogenic supplements, herbal supplements, fitness equipment, apparel, "professional" advice, weight loss, aging, and politics and puffery about licenses, registrations, and certifications.

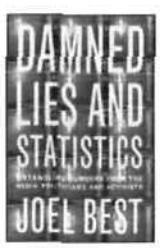
The Mind Made Flesh: Frontiers of Psychology and Evolution. **Nicholas Humphrey.** Oxford University Press. 2002. 386 pp., softcover. A volume of essays, lectures, journal entries, and articles centered on Humphrey's interests in evolutionary psychology, "which has emerged as the most fertile field of all psychology." They all concern the uneasy relation between minds and bodies and, notes Humphrey, they all take issue with received ideas. The book is organized into sections on selves, feelings, discoveries, pretenses, and seductions.



The Paradox of God and the Science of Omniscience. **Clifford A. Pickover.** Palgrave Global Publishing at St. Martin's Press, 175 Fifth Ave., New York, NY 10010-7848. 2002. ISBN 0-312-29411-5. 262 pp. $26.95, hardcover. A book about what Pickover calls the science of omniscience. It's an examination of omniscience and religious paradoxes. Pickover's personal approach is not systematic or comprehensive but instead touches on topics that interest him personally and that he hopes will enlighten and entertain. Lively, illustrated chapters treat the paradoxes of Newcomb, Eden, Bodhisattva, Pascal's Wager, Godel's proof of God, and many other puzzles and paradoxes.

Religion Explained: The Evolutionary Origins of Religious Thought. **Pascal Boyer.** Basic Books, 10 East 53rd Street, New York, NY 10022-5299. 2001. ISBN 0-465-00695-7. 375 pp. $27.50, hardcover. Why does religion matter so much in people's lives? Why are there several religions instead of just one? Why are there churches and religious institutions? Why does religion persist? Boyer, a professor at Washington University, St. Louis, says the intellectual tools for thinking about these problems finally exist. They are provided by theories and research in evolutionary biology. The short answer to all these questions: "Because that is the way our minds were prepared by evolution." Boyer explores the details and ramifications, based on findings in psychology, anthropology, cognitive science, and other fields.

What Are the Odds? The Chances of Extraordinary Events in Everyday Life. **Jefferson Hane Weaver.** Prometheus Books, 59 John Glenn Drive, Amherst, NY 14228-2197. 2001. ISBN 1-57392-933-6. 250 pp. $21, softcover. A book Weaver wrote primarily to entertain and inform readers about the odds that certain events will occur. It was motivated, he says, by a desire to provide a lighthearted treatment of the subject matter because mathematics in general and statistics in particular have very poor images, despite the crucial importance of these fields in our modern technological society. There are chapters on romance, sex, disasters, striking it rich, workplace dangers, being audited, getting into an Ivy League school, and becoming a film star, rock star, or best-selling author.



Damned Lies and Statistics: Untangling Numbers from the Media, Politicians, and Activists. **Joel Best.** University of California Press, 2120 Berkeley Way, Berkeley, CA 94720. 2001. ISBN: 0-52021-978-3. 196 pp. $19.95, hardcover. Best casts a skeptical eye on the statistical claims of the media, politicians, and activists, who frequently exaggerate the severity of the social problems they are campaigning against. Drawing on examples such as estimates of the numbers of homeless, annual anorexia deaths, and how many people attended the Million Man March, Best explains how valid statistics can be misunderstood and transformed into grossly inaccurate factoids through innumeracy, deceit, and accident. Best suggests adopting neither a cynical nor a naive approach to statistical claims, but a skeptical one informed by knowledge of how statistics are generated and how they can be biased. A fine companion to John Allen Paulos's books such as *Innumeracy* and *A Mathematician Reads the Newspaper.*

—Kendrick Frazier □

Fourth World Skeptics Conference

Prospects for Skepticism

The Next Twenty-Five Years

June 20–23, 2002

Burbank, California

at the Hilton, Burbank Airport and Convention Center

Sponsored by the Committee for the Scientific Investigation of Claims of the Paranormal

The Fourth World Skeptics Conference, sponsored by the Committee for the Scientific Investigation of Claims of the Paranormal (CSICOP) is to be held at the Hilton, Burbank Airport and Convention Center, Burbank, California, June 20–23, 2002.

Our intent is to bring together the leading lights in the skeptical movement and we are eager to have you be part of this event. The overall theme is "Prospects for Skepticism: The Next Twenty-Five Years." We not only want to examine issues that are important today, but also try and focus on topics that will influence science and skepticism in the future. Thus, we are planning sessions on alternative medicine, unsubstantiated psychotherapies, confidence and financial scams, intelligent design and attacks on evolution, education and young skeptics, urban legends, a meeting of local skeptical organizations, and other topics.

Schedule of Events

THURSDAY, JUNE 20

Registration 6:00–7:30 pm

Paul Kurtz, Chairman, CSICOP — Welcoming Remarks

DON'T GET TAKEN — 7:30–10:00 pm

- **Paul Kurtz,** Moderator
- **Richard Lead,** treasurer of the NSW (Australian) Skeptics
- **Richard Schroeder,** CFP, Executive Vice President, Schroeder, Braxton & Vogt, Inc., Amherst, NY
- **Robert Steiner,** speaker, expert, author in the fields of magic, confidence games, and psychic investigations
- **Ray Hyman,** Professor of Psychology–Emeritus, University of Oregon

FRIDAY, JUNE 21

Registration 7:30–9:00 am

EVOLUTION AND INTELLIGENT DESIGN — 9:00 am–12:00 pm

- **Massimo Pigliucci,** Moderator, Associate Professor of botany at the University of Tennessee in Knoxville
- **William Dembski,** Associate research professor in the conceptual foundations of science at Baylor University and a senior fellow with Discovery Institute's Center for the Renewal of Science and Culture
- **Wesley Elsberry,** graduate student at Texas A&M University researching bisonar sound production and bioenergetics in bottlenose dolphins
- **Kenneth Miller,** Professor of biology at Brown University
- **Paul Nelson,** Editor of the journal *Origins & Design*

SPECIAL LUNCHEON ADDRESS — 12:00–2:00 pm

- **Harlan Ellison,** World-famous author of 75 books. He is waiting for the *Guinness Book of World Records* to confirm his title as the "Biggest Pain in the Ass in the Western Hemisphere."

Concurrent Session
FRINGE PSYCHOTHERAPIES — 2:00–5:00 pm

- **Scott Lilienfeld,** Moderator, Emory University, Department of Psychology
- **Gina Green,** Director of Research, New England Center for Children
- **Steven Jay Lynn,** State University of New York, Binghamton, Psychology Dept.
- **Jean Mercer,** Ph.D., Richard Stockton State College, Department of Psychology
- **Carol Tavris,** social psychologist and writer

Concurrent Session
LOOK TO THE STARS — 2:00–5:00 pm

- **James McGaha,** Moderator, Major, USAF Retired, Director, Grasslands Observatory
- **Alan Harris,** Senior Research Scientist in the Earth and Space Sciences Division, JPL
- **Tod Lauer,** Kitt Peak National Observatory
- **David Morrison,** Senior Scientist at the NASA Astrobiology Institute

KEYNOTE ADDRESS — 8:00–10:00 pm

- **Marvin Minsky,** Toshiba Professor of Media Arts and Sciences, and Professor of Electrical Engineering and Computer Science, at the Massachusetts Institute of Technology

SATURDAY, JUNE 22

Registration 8:30–9:00 am

URBAN LEGENDS — 9:00 am–12:00 pm

- **Benjamin Radford,** Moderator, *Skeptical Inquirer* magazine
- **Jan Brunvand,** Professor Emeritus, Department of English, University of Utah, author, *Encyclopedia of Urban Legends, The Vanishing Hitchhiker, The Truth Never Stands in the Way of a Good Story* and *Too Good to Be True*
- **David Mikkelson,** Creator, director snopes.com
- **Barbara Mikkelson,** Creator, director snopes.com
- **Timothy Tangherlini,** folklore instructor at UCLA, where he holds a joint appointment in the Scandinavian Section and the Dept. of East Asian Languages and Cultures

NATIONAL MEDIA CENTER–LOS ANGELES

LUNCHEON 12:00–2:00 pm

CFI WEST VIDEO

- **James Underdown,** Executive Director, CFI West
- **Vern Bullough,** Distinguished Professor, University of Southern California

Concurrent Session

MEDICAL CLAIMS 2:00–5:00 pm

- **Wallace Sampson,** Moderator, formerly the Associate Chief of Hematology and Medical Oncology at the Santa Clara Valley Medical Center, and a Clinical Professor of Medicine at Stanford University School of Medicine. Editor, *The Scientific Review of Alternative Medicine*
- **Stephen Barrett,** Retired psychiatrist, has achieved national renown as an author, editor, and consumer advocate. Board Chairman, Quackwatch
- **Willem Betz,** Professor in General Practice Medicine at the University of Brussels VUB, Head of Chair and Director and of the Academic Centre for Training of General Practitioners (University of Brussels, VUB)
- **Steve Novella,** assistant professor of neurology at Yale University School of Medicine. Co-founder and president of the New England Skeptical Society (NESS). Editor, *New England Journal of Skepticism*
- **Marcia Angell,** Senior Lecturer, Dept. of Social Medicine, Harvard Medical School; former Editor-in-Chief, *New England Journal of Medicine*

Concurrent Session

THE INVESTIGATORS 2:00–5:00 pm

- **Joe Nickell,** Moderator, Senior Research Fellow, CSICOP
- **Jan Willem Nienhuys,** Department of Mathematics and Computing Science, Eindhoven University of Technology (The Netherlands)
- **Massimo Polidoro,** Co-founder and Executive Director of the Italian Committee for the Investigation of Claims of the Paranormal. He holds a degree in psychology from the University of Padua.
- **Richard Wiseman,** Director, Perrott Warrick Research Unit at the University of Hertfordshire, England

PRE-BANQUET SOCIAL HOUR 6:00–7:00 pm

(cash bar)

AWARDS BANQUET 7:00–10:00 pm

- **Paul Kurtz,** Host, CSICOP Chairman
- **Gabe Kaplan,** Comedian, TV personality, star *Welcome Back Kotter*
- **Harlan Ellison,** World-famous author of 75 books. He is waiting for the *Guinness Book of World Records* to confirm his title as the "Biggest Pain in the Ass in the Western Hemisphere."
- **Marvin Minsky,** Toshiba Professor of Media Arts and Sciences, and Professor of Electrical Engineering and Computer Science, at the Massachusetts Institute of Technology
- **Marcia Angell,** Senior Lecturer, Dept. of Social Medicine, Harvard Medical School; former Editor-in-Chief, *New England Journal of Medicine*

SUNDAY, JUNE 23

Concurrent Session

EDUCATING OUR FUTURE 9:00 am–12:00 pm

- **Amanda Chesworth,** Moderator, program director of the Young Skeptics, specializing in educational materials and activities for children
- **Don Hockenbury,** Assistant Professor of psychology at Tulsa Community College
- **Sandra Hockenbury,** science writer who specializes in psychology
- **Diane Swanson,** *award-winning author of over forty books, specializing in natural history and science, including Nibbling on Einstein's Brain*
- **Charles Wynn,** Professor of chemistry at Eastern Connecticut State University

Concurrent Session

PARANORMAL AROUND THE WORLD 9:00–12:00 pm

- **Amardeo Sarma,** Moderator, GWUP (Germany)
- **Shen Zhenyu,** Research Fellow at the China Institute for Popularization of Science and Technology (China)
- **Lin Zixin,** Former Editor, *Science and Technology Daily,* (China)
- **Sanal Edamaruku,** Chairman of the Indian Rationalists Association (India)
- **Manuel Abraham Paz y Miño,** Editor, *Neo-Skepsis* (Peru)
- **Alejandro J. Borgo,** Founding Member of CAIRP, Argentina Skeptics Organization (Argentina)
- **Sami Rozenbaum** (Venezuela)
- **Mario Mendez-Acosta** (Mexico)

Conference Information

Accommodations: Hilton, Burbank Airport & Convention Center,
2500 Hollywood Way, Burbank, CA 91505 (818) 843-6000
Standard Guest Room @$89.00 +10% tax/night
Junior Suite Guest Rooms @$127.00 +10% tax/night
Additional Person Charge $20.00 per person
Parking @ $6.50 + 10% city tax/cab

There is an airport shuttle that runs from 6:00 am to 10:00 pm

Discount airline rates can be obtained by calling the CSICOP travel agent Jacque Vernen, Stovroff & Taylor Travel, at (716) 631-4022, ext. 212 or (800) 543-8616 ext. 212.

If you have any questions about the program or the arrangements call or write Barry Karr at CSICOP, PO Box 703, Amherst, NY 14226; (716) 636-1425 ext. 217, or by e-mail at: skeptinq@aol.com.

Media Representatives should contact Kevin Christopher at CSICOP, PO Box 703, Amherst, NY 14226 (716) 636-1425 ext. 224 or by e-mail at: press@csicop.org.

Hosted by: The Center for Inquiry West, 4773 Hollywood Blvd., Hollywood, CA 90027 (323) 666-9797.

Opinions expressed at this conference are those of the individual speakers and do not necessarily represent the views of CSICOP.

YES, I (we) plan to attend the 2002 World Skeptics Conference in Burbank, California. Register your seat early for the Fourth World Skeptics Conference. Preregistration is advised. Registration does not include meals or accommodations. Make checks payable to CSICOP and return this coupon to:

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The Logic That Dare Not Speak Its Name

RALPH ESTLING

Proposition: There are eleven leprechauns colored green with purple polka dots dancing away here in my study. They are all undetectable by any means whatsoever. You don't believe me? Very well then. Prove me wrong.

You have probably come across this sort of "logic" before (yes, I'm afraid *logic* must have those alerting quotation marks around it), though the chances are that rather than multicolored leprechauns it was ESP, UFOs, the Tooth Fairy, the Great Pumpkin, little silvery men with big funny eyes from the planet Koozbane, ghosts, goblins, angels, demons, gods, and a thousand other things like them. You find it all very time-wasting and silly? Well, two of the twentieth century's greatest professional thinkers, Bertrand Russell and Ludwig Wittgenstein, hotly debated the exact same proposition I mention in my opening paragraph, except that it was an undetectable tiger that was in Russell's study, rather than my leprechauns.

They argued all day and for several days afterwards over the question of whether such a statement—"There is a totally undetectable tiger here in the study"—was logically and linguistically valid or flawed, Russell insisting it wasn't valid, Wittgenstein maintaining oh yes, it was. No, I don't know who won the argument and if you do happen to know, please don't write in and tell me.

Our frequent columnist Ralph Estling writes from Ilminster, Somerset, England.

For this is the logic that dare not speak its name, the logic that says, I believe in something completely incredible, unprovable, irrational, and with no evidence to support it, but never mind all that. Just show me where I'm wrong. *Prove* that my (fill in favorite belief system) doesn't exist!

People are a funny lot. They spend half their lives telling everyone who'll listen how reasonable they, the spokespersons of unreason are, and the other, and more energetic half, describing in minute detail what God's opinion on genetically modified tomatoes is. Their approach is too desperately self-assured to be entertaining (for such screeching certainty is a sure sign of inner insecurity), nor are they inclined to regard such a triviality as plausibility to be a consideration.

What they are good at is picking logic up by its tail and whirling it around in circles, ignoring its protesting screams and caterwauls. Since it is not possible for you to produce overriding evidence that my undetectable leprechauns, or tiger, or god, do not exist, I am free to insist that they do (Strong Wooly-Minded Assertion) or at least that they might (Mild Wooly-Minded Assertion). Having no acquaintance with the rules governing logical, deductive thinking and analysis, they feel free to use them any way they like, stand them on their heads, spin them around, turn them inside-out, back to front, tie them up into a pretzel, and, through it all, proclaim with total aplomb, What a thoroughly rational boy, or girl, am I.

It will not wash. It will not even rinse lightly.

Reason follows rather stricter rules. Among other things, it demands that the proposer of a new (or as in the case of our "logicians," very, very old) hypothesis is the one who must supply evidence for it, not that his doubters must supply evidence against it—though of course if they can so much the better—the point being they are not obliged to. Onus of proof is always on the initiator, the originator, the proud papa. For (important point so read carefully) it is not necessarily the idea itself that is under assault, but the evidence presented in its behalf. It is this evidence, observational, experimental, mathematical, or analytic, that must undergo the test of validation. If no evidence is presented, then no test can be performed, and the hypothesis is still-born. This does not prove the hypothesis false, but it does prove it unworthy of further consideration, time, and effort.

Scientists are rather prone to make this sort of dismissal and nonscientists often get quite worked up about it. After all, no one has conclusively *shown* that cold fusion *cannot* occur! Quite so, and also quite beside the point. For what scientists are saying is not that they are totally and absolutely convinced that it can't happen, they are only totally and absolutely convinced that no sure and

telling evidence for its occurrence has been produced so far.

Another example: Lots of people, including several who ought to know better, point to the case of Alfred Lothar Wegener. In 1912 Wegener proposed the notion of continental drift. He noticed, as thousands had before him, that South America and Africa could fit together rather well if you nudged them a bit and he suggested that they once had been so fitted, that land masses break up and bump together, floating around on the surface of the Earth like scum on boiling cabbage soup. The trouble was, he could think of no driving force that would create such motion. His hypothesis was dismissed by almost all geologists of the day. Forty and more years later, evidence began to emerge that indicated a cause for such movements of the Earth's crust and the idea of plate tectonics was born, gained converts as the evidence accumulated, and, as more proof piled up, became a standard theory. This caused some philosophers and historians of science to exclaim, See how wrong scientists can be! See how quick they are to dismiss a correct hypothesis out of hand! Let it, as mother used to say (about all sorts of things), be a lesson!

But of course, the scientists who refused to accept Wegener's continental drift hypothesis in 1912 and up to about 1950 were entirely right to do so. There was no compelling evidence for it, only some reasonable indications. Fifty or so years on, from 1912, there was. So scientists changed their minds. It was not the *idea* itself that was under fire in 1912, it was the total lack of proof for it. Proof obtained, opinion altered. Where is the moral crime, where is the folly, where is the sin of pride, where the false, unjustified conclusion drawn by foolish, arrogant men? It is with those philosophers and historians of science, those "logicians" in quotation marks, who say evidence produced between 1950 and 1970 should have convinced scientists in 1912. Logic? There is another name for it but it cannot be printed in a publication that may fall into the hands of women, children, servants, and persons of high moral certitude and rather lower mental prowess.

Nor should it fall into the hands of people who think that logic is their slave, to do with as they will, rather than their master, a fair but inflexible master who does not forget or forgive imbecility by those who are by no means imbecile and therefore should know better and can offer no excuse, those of us like Dostoyevsky's Grand Inquisitor who, recognizing the returned Christ preaching love, kindness, and gentleness, condemns him to the stake as a disturbing, disconcerting influence on society, one to be removed quickly at all cost, all with an insane logic that leads ineluctably to its logically insane, consistent conclusion.

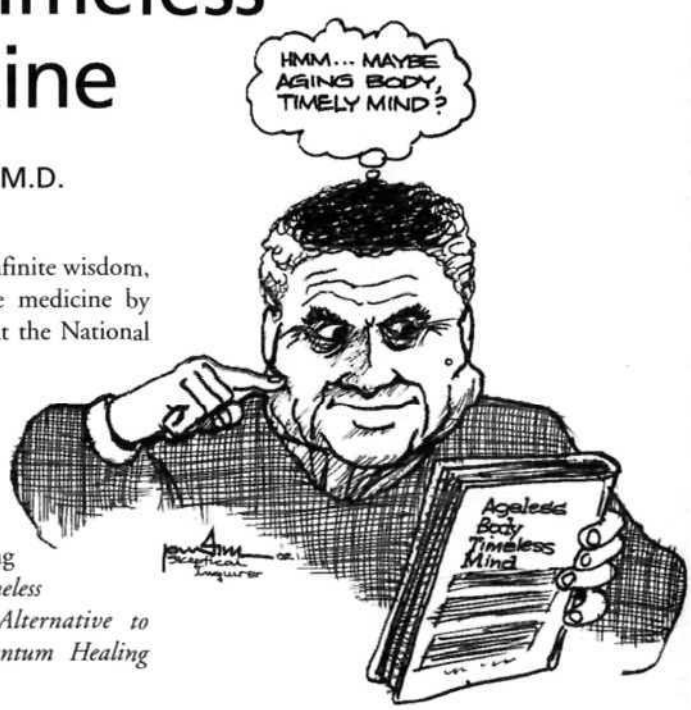
But then, no one expects the Spanish Inquisition.

Laughter: The Real Ageless, Timeless Medicine

J.D. HAINES, M.D.

If you've been living in a cave the last several years, you might be surprised at how respectable the field of alternative medicine has become. Remember when alternative medicine was just a polite term for quackery? Well, no more. Our government, in its infinite wisdom, has enshrined alternative medicine by creating a special office at the National Institutes of Health.

One of the most visible advocates of alternative medicine and spiritual healing is Dr. Deepak Chopra, author of over twenty best selling books. *Ageless Body, Timeless Mind: The Quantum Alternative to Growing Old*, and *Quantum Healing*



J.D. Haines, M.D., still grinning, is a board-certified family practitioner in private practice in Stillwater, Oklahoma. He is a clinical associate professor of family and preventative medicine at the University of Oklahoma College of Medicine.

occupied positions on the *New York Times* bestseller list for years. The books promise that illness and the aging process can be banished by the power of the mind, with the help of Ayurveda, a 6,000-year-old Indian healing system.

For example, Chopra explains the occasional spontaneous remission from cancer as due to a "jump to a new level of consciousness that prohibits the existence of cancer . . . this is a quantum jump from one level of functioning to a higher level." Physicists, however, remain puzzled about how quantum mechanics relates to cancer.

But the American public prefers Chopra's message because they have come to believe that we live in a universe where anything is possible. *Newsweek* crowned Chopra as "the hardest-working guru in show business" several years ago when his enterprises reached $15 million per year in revenue. His fifty lectures a year to thousands of believers command a fee of $25,000 each.

Chopra writes, "The physical world, including our bodies, is a response of the observer . . . beliefs, thoughts, and emotions create the chemical reactions that uphold life in every cell." In his book *Voodoo Science*, Robert Park counters, "Quantum theory is invoked by Chopra to convey the impression that ayurvedic medicine has somehow been validated by modern science. We cannot help but notice, however, that the author of *Ageless Body* shows unmistakable signs of growing old right along with the rest of us."

Chopra has enjoyed phenomenal success, "writing about things that people are already interested in." The public is naturally receptive to Chopra's age reversal claims, which state that aging can be influenced in the reverse direction through exercise, meditation, and removal of toxins from the body. Chopra is banking on the continual growth of alternative medicine as the baby boomers move further into middle age and develop more health problems.

So in the spirit of open-mindedness (and also because I recently turned forty-five), I decided to give Dr. Chopra a try. I ordered some of Chopra's audiotapes and prepared myself for a mind/spirit altering experience.

But an unexpected complication immediately arose. Chopra himself is the narrator on the tapes and I could not overcome the distraction of his Indian accent. I'm sure my Okie drawl sounds equally distracting to Chopra. Unfortunately, Dr. Chopra sounds identical to the main character in the 1968 Peter Sellers movie *The Party*.

In the movie, Sellers, plays Hrundi V. Bakshi, an Indian actor who is invited to a Hollywood movie mogul's party by mistake. Chopra's voice is a reincarnation of Seller's character. *The Party* is a hilarious movie, one of Seller's masterpieces, and one I've enjoyed many times.

I simply could not concentrate on Chopra's message as scenes from *The Party* replayed in my head. The bumbling Bakshi with his silly grin kept intruding into my consciousness. I was soon grinning from ear to ear. The tapes were having an unintended positive effect.

For Peter Sellers fans, you may want to consider buying copies of Chopra's books rather than the tapes. Or better yet, rent a copy of *The Party*. If laughter is the best medicine, this movie should make you feel much better.

I think that Dr. Chopra would approve, since he advises people to "follow your bliss." Peter Sellers, who was a guru of comedy, can certainly provide many hours of bliss. Plus, you don't even have to learn how to meditate or swear off cheeseburgers. And a buck or two at the video store is a real bargain for a transcendental experience. □

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HOW TO BE A "WHYS" SKEPTIC

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This workshop will focus on getting the skeptic's message across, helping the participants to better debate and convey what skepticism is about. A more important goal, however, is to help the participants better articulate and clarify for themselves why they are skeptics, why skepticism matters, why should anyone listen to us, and similar issues. We all have relatively vague answers to these questions. By attempting to explain and articulate our vague ideas to others, we help make them more explicit and clearer to ourselves. In addition to presentations by the faculty, the participants will be divided into teams. The teams will be given assignments to role play skeptics and believers debating paranormal claims. For example, in the past year Randi debated two mediums on two programs of *Larry King Live*. How could he have communicated his position better? With benefits of hindsight and role playing such encounters, can we devise better strategies to win the public relations battle?

For more information call Barry Karr at (716) 636-1425 ext. 217 • E-mail: skeptinq@aol.com

Many Worlds? A Response to Bryce DeWitt's 'Comments . . .'

MARTIN GARDNER

I was puzzled by Bryce DeWitt's comments (SI, Follow-Up, March/April 2002) as well as honored that he would take seriously my column on "Multiverses and Blackberries" (September/October 2001). I know he read my column at least once because it so infuriated him, but did he read it again before he put forth his animadversions?

For example, he calls attention to the fact that three famous physicists, Steven Weinberg, Murray Gell-Mann, and Stephen Hawking, support the many worlds interpretation (MWI) of quantum mechanics. Did DeWitt forget that I wrote: "This view [is] widely defended by such eminent physicists as Murray Gell-Mann, Stephen Hawking, and Steven Weinberg"?

In what way do they defend it? The main point of my discussion of the MWI (only part of a column on multiverses in general) is that the MWI has two widely different interpretations, A and B.

A. The myriads of other worlds are not real in the *same way* as our world is real. They are abstract concepts in the MWI's language. This is the interpretation favored by Weinberg and Hawking. (I'm not sure of Gell-Mann's current belief.) Indeed, Hawking once said that the MWI is "trivially true." It is true in a way similar to the way the Pythagorean theorem is true even though you'll not find pure squares and triangles anywhere in the cosmos. "Is there any difference," DeWitt asks, between things "physically real" and "abstractions such as numbers and triangles"?

It is hard to believe a physicist could ask such a question. There is an enormous difference. Ten "exists" only as an abstraction. But ten pebbles and ten cows are "real" in an obviously different sense. There is a vast difference between the concept of a perfect triangle and crude models cut from cardboard or drawn on paper.

There is a vast difference between the concept of a perfect triangle and crude models cut from cardboard or drawn on paper.

B. The countless worlds of the MWI are every bit as physically "real" as the world we are now in. Although they are theoretical concepts, they are, like numbers, modeled by physically real entities such as billions of universes. This is the minority view held by such MWI experts as David Deutsch, from whose work I quoted, and by DeWitt himself.

DeWitt admits that these other worlds are not now observable. But this is also the case, he writes, with planets in distant galaxies. We believe they are there even though we can't see them. Many physicists, he correctly adds (Mach for one) denied the reality of atoms. Now we "see" them with the aid of powerful instruments. Some day, DeWitt is convinced, the other worlds of the MWI may become observable! Clearly he believes that these worlds are "out there" and just as "real" as the universe we know.

DeWitt counters my objection that *the MWI violates Occam's razor by* arguing that it also uses the razor to cut down the number of *concepts* needed to talk about quantum mechanics. Did he forget that I said precisely this? I devoted a paragraph to how the MWI eliminates thorny paradoxes such the paradox of Schrödinger's notorious cat. I explained how the MWI eliminates the "measurement problem" by doing away with Bohr's "collapse of the wave function" by substituting a single wave function for the entire universe; one that evolves deterministically and never collapses. However, for such simplifications, I maintained, the MWI pays an incredible price.

One further point. Although DeWitt admits that the MWI is strictly deterministic, he thinks I "blundered" again by saying that this forbids free will. On this metaphysical question, I agree with William James and many contemporary thinkers that free will and determinism are incompatible. Interested readers can check the chapter on free will in my *Whys of a Philosopher Scrivener.* □

Martin Gardner's most recent collection of his SKEPTICAL INQUIRER *columns is* Did Adam and Eve Have Navels? *(W.W. Norton, 2000).*

Magnetic Mountains

MARK BENECKE

I would like to ask the readers of the SKEPTICAL INQUIRER for support in an ongoing study.

During a research stay with the University of the Philippines, Los Baños, I got a chance to visit a so-called magnetic mountain. Magnetic mountains are geological structures with some slope (strictly speaking, a slope—or a height—not necessarily counting for a mountain but for a hill) that allow every rolling or flowing object or substance to appear to roll or flow uphill.

In 1997, I carried out preliminary experiments concerning magnetic fields, hidden iron, etc. on a magnetic mountain near Los Baños leading to the (obvious) result that most likely an optical illusion caused the allegedly magnetic effect (figure 1). However, it was startling to observe that even on photographs the optical illusion remains relatively intact (see figures 2 and 3). As one can see, an upward slope that goes actually downwards, and a downward slope that goes actually upwards seem to be clearly visible on the pictures. Obviously, the lack of right-angled structures plus the bend of the street itself make it impossible to identify the optical illusion.

A theory brought forward by a student was that a strong magnetic field might be the force that pushes the materials (usually cars of local tourists) uphill. Such a strong magnetic field seems unlikely, and amongst the materials tested by us on the Los Baños hill were glass marbles of around 1 cm diameter, empty plastic bottles, and water that was poured out, all of them known to be not magnetic under normal conditions. All materials, however, did roll or flow in a seemingly upward direction.

From scientists in Canada, Thailand, and elsewhere I learned that "magnetic mountains" exist in several countries, and that accounts of them might exist in popular science literature. Since none of the tourist departments that I contacted until now cooperated in this matter, I would like to ask the readers of the SKEPTICAL INQUIRER to report cases of magnetic mountains that they have either observed themselves, or of which they got to know by any other means. Every piece of information, no matter how small, will be appreciated. I would also like to encourage national and local skeptical organizations to spread the request amongst their communities.

We are currently planning a proper geological survey of as many magnetic mountains as possible. If there is anything you can contribute, please let me know at forensic@benecke.com, or at the following postal address: Mark Benecke, Int. Forensic Res. & Consulting 250411 Pastfach, 50520 Cologne, Germany.

Editor's Note: We're glad to publish the query, but we'd be willing to bet that this "magnetic mountain" is indeed an optical illusion. For SKEPTICAL INQUIRER articles on related matters see the short section "Magnetic Hill" in "Canada's Mysterious Maritimes," by Joe Nickell, January/February 2000 (also the letter and reply in May/June 2000 issue, p. 68); "Believing What We See, Hear, and Touch: Delights and Dangers of Sensory Illusions," by Rainer Wolf, May/June 1996; "It's All an Illusion! And Here's How It's Done," by Ray Hyman, and "Explanation of the Impossible Box and the Plank Illusion," by Jerry Andrus, both Spring 1994; and "Spook Hill: Angular Illusion," by Guss Wilder, Fall 1991. Further research on allegedly magnetic mountains including experimental data is performed by Mark Benecke is in press with the German *Skeptiker.* □

Mark Benecke, Ph.D., is a forensic biologist and criminalist and a scientific consultant for the GWUP and the Skeptiker *magazine.*

Photos by Jim Benecke

Once a tourist spot, now forgotten: a magnetic hill in the Phillipines.

Even water seems to flow upwards.

A car (parking gear) slowly rolling "upwards."

Econometric Modeling and Multiple Regression

While Ted Goertzel's article "Myths of Murder and Multiple Regression" (January/February 2002) raises a number of important issues, I fear that its treatment of them does more harm than good. In addition to terminological difficulties ("econometric modeling," "structural equation modeling," "path analysis," and "multiple regression" are *not* synonymous!), Goertzel's article falsely implies that modern quantitative data analysis (much or all of which he seems to equate with multiple regression) is simply an "arbitrary" game with little connection to reality.

To put it bluntly, it is simply *not* true that competent data analysts "can achieve any results they want without violating the rules of regression analysis in any way," as many social science articles amply attest. Indeed, the highly restrictive "rules" of OLS render it inappropriate for many problems, often prompting conscientious researchers to employ alternative approaches. The charge that such modeling is instead motivated by some sort of "statistical one-upmanship" is nonsense. Rather, researchers are responding to the need to use more sophisticated techniques (e.g., multivariate time series methods) in order to address questions such as causality (which, Goertzel correctly notes, cannot be directly inferred from multiple regression).

Blind reliance on multiple regression per se is certainly foolish, but poorly aimed criticisms such as those in "Myths of Murder and Multiple Regression" do little to help matters. In my opinion, Goertzel's time might be better spent promoting the use of robustness testing, repeated subset cross-validation, and other well-known strategies for assessing expected predictive power on the basis of limited data.

Carter T. Butts
Department of Social and
Decision Sciences
Carnegie Mellon University
Pittsburgh, Pennsylvania

Though I share many of Goertzel's concerns and applaud his call for truly predictive tests, I believe that his basic criticism may have been misdirected and that statistical predictions are in fact *underutilized* in many important decision-making contexts.

Any statistical procedure can be misused or abused, and results must be interpreted in light of methodology (e.g., research design, sampling, measurement reliability and validity, mathematical assumptions). Indeed, there were sufficient methodological grounds to question the validity of the results in each of the four cited examples. Rather than blaming a statistical tool, the researchers themselves must be held accountable for their oversights (not to mention the editors and reviewers at journals that published their work; those who trust Internet sources that lack rigorous peer review always do so at their own peril).

A substantial research literature demonstrates the superiority of statistical decision making over unaided clinical judgment. Although statistical predictions are far from perfect, their empirical accuracy routinely exceeds that of experts in many professions (e.g., medical/psychological diagnosis, parole hearings, college/graduate admissions, personnel decisions), often by a substantial margin. Despite this impressive track record, there remains a preference for using one's head to integrate information. Significant improvements in accuracy and efficiency may remain unrealized until more people overcome their general distrust of statistical predictions and embrace them in areas where they have demonstrable predictive utility.

John Ruscio
Department of Psychology
Elizabethtown College
Elizabethtown, Pennsylvania

While I appreciate Ted Goertzel's skeptical outlook toward the misuse of statistical techniques and its potentially dangerous outcomes in terms of social policy, I would like to strike a chord of balance concerning statistical analyses in the social (and other) sciences.

Goertzel repeats the statistician's mantra that "correlation is not causation," but this phrase is often interpreted to mean that there is no relationship whatsoever between causation and correlation. If that were true, not only the social sciences, but also much of biology, geology, chemistry, and physics—not to mention statistics itself—should go the way of the phlogiston.

As Bill Shipley has nicely pointed out in his book *Cause and Correlation in Biology* (Cambridge 2000) a better way to think of the problem is by using a metaphor based on *wayang kulit*. In this form of oriental art, objects are used to cast a shadow on a screen and the spectator only sees the shadows, interpreting them according to the context of the play. The real objects causing the shadows are always hidden to the observer. The relationship between causes and correlations is pretty much the same: phenomena and forces in the world that are causally connected generate shadows in the form of correlations. Since many different objects can cast what appears to be the same shadow, it is difficult to go from correlations to the underlying causation. This is what philosophers often refer to as the problem of "underdetermination of theories by the data."

Now, as Shipley points out and Goertzel neglects to, some statistical analyses are better than others at establishing a connection between shadows and objects. Multiple regression—criticized by Goertzel—is indeed one of the worst approaches. But other techniques casually mentioned in the SI article, such as structural equation modeling, can actually be used to unveil some of the correspondences between correlations and their underlying causes, if used properly and with carefully collected data.

While not disagreeing with the spirit of Goertzel's article, I fear that most readers will come away with the impression that statistics is, as Mark Twain put it, "one damn lie after another." That would be a disservice to science and critical thinking.

Massimo Pigliucci
Association Professor of Ecology
& Evolutionary Biology
University of Tennessee
Knoxville, Tennessee

Ted Goertzel's article on econometric (and other types of mathematical) modeling was interesting, internally consistent, but also flawed in its basic analytical assumptions and, therefore, in the conclusions reached. His thesis that it is "junk science" to use models "with no demonstrated predictive capability" to deal with complex social issues misses the intent, and thus the value of the work that he so severely criticizes.

As a sociologist, he is surely aware that we do not now have the capability to identify and quantify all the factors that affect such complex systems.

Indeed, there is not real evidence to support the proposition that these systems can ever be accurately represented by predictive models. Nonetheless, we still must deal with these situations.

These models are an attempt to develop an explicit description (theory) of at least some of the factors critical to the operation of a specific system (question) and how they interact to effect what happens. The result

is an analytical tool for continued study and research, not a predictive model. The theory is presented in sufficient detail so that other investigators have the opportunity to further pursue the question. When the model (theory) is modified and run again, and a new result obtained, we learn more about the identified factors and their interactions. The charge that these model exercises are not real science and that there is "little or no progress" made is not justified when viewed from this perspective. Those doing this work are following true scientific principles: they establish a theory which can be tested by others, and which can be used to identify valuable questions for further research.

Unfortunately, model results are often used by partisan advocates to advance their particular ideology. Often they do not really understand the work they are quoting, and misuse the results terribly. This is, I believe, where the junk science comes in. We must distinguish between those who are trying to understand complex social issues and how we might deal with them, and others who seek only to advance a particular viewpoint that they have taken on faith alone. This is an area that has not been covered in SI, and one that, perhaps, should be. It would be interesting to have another article from Mr. Goertzel written from this perspective.

Robert L. Folstein
Germantown, Maryland

I would have been more impressed if Goertzel had included faulty research used by the anti-gun "Brady Bunch" instead of only dogma of the National Rifle Association. An "econometric analysis" (often quoted by Bradyites) of homicides in Seattle and Vancouver claims that gun control caused Vancouver's lower homicide rate because the two are demographically similar. Even though the latter has few blacks or Hispanics, Seattle whites have a lower homicide rate than Vancouver whites, and the difference in homicide rates is strongly correlated to Seattle's black and Hispanic population!

Is multiple regression difficult to use correctly? And how! Lott controlled for hundreds of variables and concluded a change of a few percentage points. How about sensitivity analysis for the controlled variables? Is the result believable without knowing that a minor error in a controlled variable could make the result vastly different? Or is that Lott's incomprehensible complexity? Is Goertzel possibly not competent to criticize?

Good statistical analysis is *very* difficult. That should have been Goertzel's explicit *and* implicit point.

If SKEPTICAL INQUIRER is part of the group of media believing Bradyites correct and NRA wrong without rigorous study of conflicting data, I will cancel my subscription. Skeptical means skeptical, no matter who!

Sam Brunstein
Burbank, California

The question of gun control is intensely political, and statements on one side should be viewed just as skeptically as those on the other side.

Goertzel cites objections by Zimring and Hawkins to the work of Lott. It would be appropriate to note that Zimring and Hawkins have long preached essentially prohibitionist firearms control, and can hardly be considered as neutral observers. They seem to me to be religiously defending doctrine against observation. Lott, on the other hand, had apparently not previously been involved in the gun control controversy at all. That is consistent with his own statement that he became interested only because of questions from a student in one of his classes.

Goertzel quotes Zimring and Hawkins as saying that "a determined econometrician can produce a treatment of the same historical periods with different models and opposite effects." He then refers to a report by Black and Nagin, whom he considers those determined econometricians: ". . . if they changed the statistical model a little bit, or applied it to different segments of the data, Lott and Mustard's findings disappeared." However, the little bit of change amounted to deletion of most of the data. (Florida and all counties with less than 100,000 population, or about 85% of all United States counties). That left a relatively small sample loaded with heavily populated areas with high crime and very few shall-issue laws. Even then, they did not report a harmful effect of "shall issue" laws, but only that the reduction in crime was not statistically significant for the relatively few counties, with relatively little variation in shall-issue laws, on which they report.

Goertzel says that Lott's analysis is unsuitable because, in covering all the counties in the United States, it includes large cities which do not have "shall issue" laws and which do have particularly high incidences of murder. In the next paragraph he directly contradicts that, saying that Lott "simply had no data for the major cities where the homicide problem was not acute."

Politically incorrect science is not at all the same thing as junk science.

Denzel L. Dyer
Rancho Palos Verdes, California

Ted Goertzel's article unwittingly serves as a good example of how ideology may bias one's judgment.

Take Goertzel's "Myth One": If John Lott's finding, that "right to carry" gun laws lower rates of violent crime, were merely an artifact of how he chose to analyze the data, then opponents of gun ownership should be able to use the same data to show such laws cause higher crime rates. According to Goertzel, however, Lott's opponents had to remove the entire state of Florida from the data; and this did not reverse Lott's findings, but merely resulted in "no detectable impact . . . on the rate of murder and rape." As gun-control advocates had earlier predicted bodies piling up in the streets, clearly Lott's findings have proven robust enough to turn the debate around, if not to end it.

"Myth Three": Goertzel attacks Isaac Ehrlich's famous research on American executions and murder deterrence. He does not mention the recent research on British executions that produced almost exactly the same result: an execution deters eight or more murders.

Goertzel urges us to demand that models demonstrate their predictive ability; but he never mentions the inverse correlation between U.S. executions and murders in the second half of the twentieth century: as executions were reduced to zero, the murder rate soared; as executions resumed, the murder rate fell. Capital punishment opponents had once predicted the opposite: banning executions was supposed to teach criminals respect for human life, by example! But once again the debate has been turned around, and capital punishment opponents are left insisting, merely, that there is "no demonstrable effect."

Taras Wolansky
Kerhonkson, New York

Professor Goertzel's exposé of some arcane statistical methods appears to be left-wing politics crossdressing as analysis of econometric modeling and multiple regression.

For example, in Lott and Mustard's book *More Guns, Less Crime*, straightforward data indicate, even without any fancy statistical footwork, that laws passed allowing honest

citizens to arm themselves against criminals reduces crime. No great surprise there, except that this common-sense finding demolishes the implied presumptions of fervid gun control advocates.

In the U.S., most states, admittedly not the most populous nor liberal ones, have passed these shall-carry laws in order to permit ordinary citizens, without criminal records or mental problems, to carry concealed guns. These laws, even as Goertzel allows, have been shown to be beneficial and to have saved lives and prevented robberies, rapes, and other acts of violence by the thousands, where they have been enacted.

One would think even Goertzel and gun-control advocates would find this virtuous correlation intriguing and wonder if the same principle would work in populous states, instead of making complaints about exotic statistics. The fact that they do not might make one suspect them of ideological junk analysis.

Don Vandervelde
Gig Harbor, Washington

I have enjoyed the latest issue of your fine magazine, but noted an error in the article "Myths of Murder and Multiple Regression on page 20. The statement: "Lott had collected data for each of America's 50,056 counties for each year from 1977 to 1992" is grossly inaccurate. There were only 3,076 counties in America at that time, counting the Judicial Districts in Alaska, Parishes in Louisiana and counties of the Islands of Hawaii. A new county has been added by Colorado recently to make the current total 3,077.

Harry H. Incho
Medina, New York

Ted Goertzel replies:

John Ruscio is correct that statistical predictions are often superior to clinical judgments, for reasons that he explained quite well in his own article on "The Emptiness of Holism" in the March/April SKEPTICAL INQUIRER. *The key word here is* prediction. *I'm entirely in favor of statistical models that predict trends in data, other than the data used to build the models. The techniques suggested by Carter Butts may be useful for developing good predictive models. If he can get them to work, more power to him. My quarrel is with using multiple regression to "prove" causal arguments. This has done a lot of harm, beyond the examples I cited in my paper. A good example is the very controversial book* The Bell Curve *by Herrnstein and Murray. It used multiple regression to make arguments about the causes of the black-white test score gap. Clark Glymour, a distinguished philosopher of science, observed that "the unstated problem for many commentators is how to reject the particular conclusions of* The Bell Curve *without also rejecting the larger enterprises of statistical social science. . . ." It can't be done, except by rejecting multiple regression as a means of proving causal arguments. Herrnstein and Murray's multiple regression modeling techniques are just as good as those used by other researchers who reach opposite conclusions. Anyone wanting a more technical, philosophical explanation of why multiple regression cannot answer this kind of question should read Glymour's chapter "Social Statistics and Genuine Inquiry" in* Intelligence, Genes, and Success: Scientists Respond to The Bell Curve *published by Springer in 1997.*

Another example of a faulty model was the Urban Institute's prediction that a million children "might" be thrown into poverty by the 1996 welfare reform. This kind of junk science undermines public confidence in social science altogether. The important thing is not the particular technique, it is whether the models have demonstrated predictive validity. There are, as Carter Butts states, technical differences between modeling techniques. But these are not relevant to the points I was making in my article. My advice to statistical modelers is simple: no more training and testing on the same data!

I agree with Massimo Pigliucci and Robert Folstein that statistical modeling has its uses, and that much of the problem is the misuse of results by advocates. But it is not only journalists and activists who misuse the results. The Urban Institute actively promoted its predictions in an attempt to stop welfare reform. Publishing a book with the title More Guns, Less Crime *based on the data John Lott had was simply irresponsible. Don Vandervelde's hunch is understandable based on the analyses Lott published, but he is factually wrong:* crime did not go down in the counties that passed shall-carry laws. *But you would never know this from reading Lott's book. I know it because I got a copy of Lott's data set and did a number of county-by-county trend analyses myself. There was no room for these graphs in the short paper I published in the* SKEPTICAL INQUIRER, *but they are available in a longer paper available for download on my Web site: http://goertzel.org/ted. There is also a discussion of the Urban Institute study on the Web site.*

There are many other articles I might have reviewed. My focus was on the misuse of multiple regression modeling, not on gun control or the death penalty per se. The problems with Seattle/Vancouver study Sam Brunstein mentions were not with multiple regression but a failure to consider the importance of race in explaining the different trends in the cities. Rather than focusing on one causal variable, it is better to focus on a dependent variable, such as homicide rates, and then examine all the factors that may explain the trend. There are many factors that explain the trends in homicide rates in the United States in the second half of the twentieth century better than the correlations with execution rates that Taras Wolansky points to.

Harry Incho is right about the number of counties in the United States. Lott had 50,076 county level measurements, counting each year's data as a separate measurement. Denzel Dyer misunderstood my argument; my point was that Lott had no data on his causal variable—*shall-issue laws—for the major cities. He nevertheless threw them into the multiple regression calculations, which distorted his results. If he had left the large cities out it would have been better.*

Finally, I like Robert Folstein's suggestion that I write an article on how to distinguish honest attempts at untangling difficult issues from one-sided advocacy research. I do not share his optimism about the usefulness of complex modeling in fields where there is not sufficient data for predictive testing. But I would welcome examples of studies where it has been helpful, as well as of cases where it has been misused. Send your examples to me at goertzel@camden.rutgers.edu.

Three Skeptics Debate Tools

I enjoyed Alvaro Caso's "Three Skeptic's Debate Tools Examined" (January/February 2002). His discussions of Occam's razor, the burden of proof, and Sagan's balance were provocative and well reasoned. I'd like to offer another way of articulating the value of Occam's razor that may help illuminate Mr. Caso's argument.

Assumptions are based on what we do not know. If we have a theory with no assumptions, then it is based solely on what we know. If it is logically constructed, then it should be reliable—as long as what we know continues to hold true. What should we do if we have no such explanation?

Each assumption can be either right or wrong. With every assumption we add we increase our chances of guessing wrong. If we prefer to play the odds, then we would choose the explanation with fewest

assumptions. However, as every gambler knows, sometimes the long shot wins, just not usually. But what if all of our available explanations are wrong? We won't know until we can—and are willing to—test our assumptions. If we start with the one with the fewest assumptions, then the sooner we can reach a resolution. Either the explanation will be vindicated, or we will make discoveries that not only invalidate it, but that may lead to a new, less assumptive theory that is preferred to the others, some of which may also have been disproved in the process. That is how economy leads us to Occam's razor. We reduce the number of things we must find out in order to reach reliable conclusions. If an assumption cannot be tested, then it should be ignored if we want to rely on knowledge.

It is worth noting how Occam's razor has served us. The razor does not settle the question of whether or not God exists, but it does tell us how to proceed. Since God's existence is an assumption, we should proceed with our inquiries without relying on the assumption of his existence or assumptions of his nature or actions. Such assumptions would only impede us by limiting our considerations. Without the razor we would not have our science, and we would be stuck with the belief that Earth is the center of the universe and that the Sun revolves around us. Accepting assumptions stops the acquisition of knowledge.

Wayne J. Grabert
Chatsworth, California

It seems to me that Alvaro Caso misses the point in trying to provide a logical justification for the use of Occam's razor.

I brazenly suggest the only possible justification is as follows: The simpler theory is to be preferred solely because, all other things being equal, it has a greater chance of being true . . . because it contains fewer "elements" (constructs, definitions, causal relationships, what have you) all of which must be "true" in order that the theory as a whole be true. In other words, there is less that can "go wrong" with a simpler theory.

If we could somehow "break down" the theory in question by separating out its independent variables in the manner of the famous Drake equation (which yields the number of intelligent and communicative civilizations in the universe), then it is clear that, since we are ignorant regarding what probability values to assign to each element, the expression with the fewer number of variables will yield a greater product, i.e., overall probability.

And if we are somehow able to transcend our ignorance and assign probability values to a theory's independent "elements," then we should also be able to compute its overall probability of being true.

Of course, if it turned out that two competing theories wound up having the same probability value, I would still prefer the simpler one. Everyone knows a simpler theory is more beautiful, right?

Ron Darian
Los Angeles, California

Alvaro Caso discusses the import of Occam's razor, but misses an very important point. If it is agreed that one of the greatest attributes of science is testability through prediction (see Goertzel's article in the same issue), the application of Occam's razor often makes such testing possible.

The simplification of models may or may not be "correct," but such models are more likely to be testable than those based upon unnecessary complications. This holds for the assertion that cosmic voyagers had landing sites in the Andes and for the more usual research situations where collected data contains random or systematic errors. If we are allowed to posit space travelers as an explanation of piles of rocks, or if we ignore the assumption in model building that we almost always commit measurement errors in our research which should be "simplified out," our models are often untestable.

Fred L. Prince
Associate Professor, Science Education
College of Education
University of South Florida
Tampa, Florida

I enjoyed the article on the basic tools of science by Alvaro Caso, but I think this entire subject could be treated more accurately by avoiding the word "proof" altogether. Proof is a mathematical concept and has no place in science, where all theories are tentative. Caso recognizes this himself when he states that "proofs are never 100 percent certain" and "certainty is unattainable." It should be obvious that if a theory isn't certain then it hasn't been proved.

If these three tools are restated to shift emphasis from proof to evidence, they can serve as a cohesive set of criteria for the conduct of scientific investigation. Science badly needs such criteria to challenge parapsychology, creation science, etc. Here is my effort:

For a new theory to be seriously considered by the scientific community, those who propose it should present appropriate support for it. Support for a theory depends on:

1) the quality of evidence consistent with the theory;

2) the ability to address evidence supporting conflicting theories; and

3) the questions left unanswered by the theory.

Sagan's requirement for extraordinary claims is buried in (2) above: the more conflicting theories and the better the evidence supporting them, the bigger the task. Einstein, facing two centuries of solid evidence, made a most extraordinary claim, but he was able to deal with the evidence simply by showing that measurements theretofor had not been accurate enough to reveal the error.

Don Keith
Waterloo, Ontario
Canada

In his article "Three Skeptics' Debate Tools Examined" Alvaro Caso referred to Carl Sagan's oft-quoted statement about extraordinary claims as "Sagan's Balance." It is time to set the historical record straight. While Carl Sagan packaged the concept for easy consumption, he did not invent it. If we are to elevate the prescription to the level of a canon of science by giving it a formal name, then precedence for the naming honor rightly belongs to Thomas Jefferson.

The year was 1805 and Jefferson was well into his second term as President of the United States. Jefferson had always been on the cutting edge of the scientific debates of his era, and not even the pressures of high office could keep this devoted amateur scientist from participating in them. A letter he received in October brought him into one of the most contentious issues of his day—the origin of meteorites. News that French scientists had proven that stones had actually fallen out of the atmosphere had only recently reached the United States and no one knew where they came from. In October, Andrew Ellicott, a skilled astronomer and member of the American Philosophical Society, postulated in a letter to Jefferson that these rocks might somehow be manufactured by unknown chemical processes taking place high up in the atmosphere. In his response to Ellicott, the President admitted that he could not prove that the theory violated the laws of nature. However, he nevertheless rejected

Ellicott's thesis saying that it was "so much unlike any operation of nature we have ever seen it requires testimony proportionately strong" (*American Science in the Age of Jefferson*, John C. Green, The Iowa State University Press, 1984, p. 149–150). "So much unlike any operation of nature we have ever seen" is exactly what Sagan meant by "extraordinary claims" and emphasizing the need for "proportionately strong" testimony is clearly the equivalent to Sagan's "requires extraordinary evidence."

To be sure, Sagan stated the idea more elegantly and he popularized it. But neither justify giving Sagan credit for the idea's invention. Sagan's maxim is clearly just a rephrasing of what Jefferson understood and wrote down almost 200 years ago. So, unless someone can find an even earlier attribution, the statement about extraordinary claims requiring extraordinary evidence should rightly be named "Jefferson's Balance."

Shawn Carlson
Executive Director
Society of Amateur Scientists

I just read Alvaro Caso's interesting and useful article. I agree that skeptical arguments are sometimes used glibly, without real understanding.

However, I want to correct an error in physics (which is not central to Caso's argument). Einstein's theory of gravity does not have action at a distance. In general relativity gravitational effects propagate at the speed of light, as do electromagnetic effects. The resulting causal structure is said to be "local" to distinguish it from "action at a distance." The postulated existence of the graviton is an attempt to reconcile general relativity with quantum mechanics. This is an entirely different matter.

Jon Thaler
Physics Department
University of Illinois at Urbana-Champagne
Urbana, Illinois

Belief in Paranormal vs. Religious Belief

Erich Goode (January/February 2002) and Glenn Sparks (September/October 2001) make an interesting point—that belief in the paranormal is not necessarily, as most skeptics think, inversely correlated with either education or religious belief. On the other hand, religious belief and education *are* inversely correlated with each other. There might be an alternative explanation for these phenomena, which was not discussed in those articles.

Traditional religion is as opposed to the New Age as skeptics are, but for a different reason: the fear of losing followers to a competing religion. The New Age is, after all, essentially a religion, where "cosmic consciousness" replaces God, reincarnation replaces heaven and hell, aliens replace angels, etc. To avoid losing converts, many fundamentalists condemn New Age beliefs—not as false or silly, but as heresies, evil temptations, literally the creation of the devil.

It might be that the deeply religious disbelieve in the paranormal not so much because it is wrong, but simply because they renounce the devil and all his works—including the New Age.

Avital Pilpel
New York, New York

Erich Goode stated: "I asked my respondents which planet is closest to (Mercury) and which one is farthest from (Pluto) the Sun. . . ." The conclusion (Pluto) would have been incorrect between 1979 and 1999. Pluto, which has the greatest orbital eccentricity of any of the Solar System planets, was during those years at perihelion and actually closer than Neptune to the Sun. Under those circumstances, the correct answer would have been "Neptune" and not "Pluto."

Sorry. Sometimes very intelligent, educated people are unaware of obscure information such as this, and can be in error. Of course, if the question had been asked before 1979, or after 1999, then "Pluto," indeed, would have been the correct answer.

For your further information, the International Astronomical Union (IAU) considers Pluto as the largest "Trans-Neptunian Object" (TNO), in addition to its being a "planet." If Pluto ever loses its designation of "planet," then Neptune will definitely become the farthest planet in the Solar System and the number of planets will go back to eight.

Lorna J. Simmons
Westland, Michigan

Mark Twain's Skepticism

Your January/February 2002 issue has Mark Twain on the cover. He was not just a skeptic about phrenology, but also about the Bible. His skeptical writings were collected and organized by Howard Baetzhold and Joseph McCullough and published in *The Bible According to Mark Twain* (Simon & Schuster, 1996). *I enjoyed immensely your* articles on religion that centered on the theme of science and religion. I like the fact that SKEPTICAL INQUIRER stands up to the very pernicious superstition spiritualism in its many guises, though more should be written on religion.

I have a Web site which contains a smattering of articles I've collected on the historical foundation of religion, and other articles of interests to skeptics. There is a gem on New Age beliefs, published in 1979. The address is http://jeromekahn123.tripod.com/enlightenment/.

Jerry Kahn
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On my magic forum, there is presently a long-running thread on the subject of the "Torn and Restored Newspaper." This led to someone quoting a well-respected memory expert and playing-card magician as saying, "I wouldn't want to hang around with the people who really believe I can restore the paper." What this ultimately and more generically implies is that he wouldn't want to associate with people who *really* believe in magic, for a belief in *real* magic is a form of psychosis!

And yet . . . as hard-core atheist and brilliant literary wit Mark Twain observed with regard to religionists:

"You believe in a book that has talking animals, wizards, witches, demons, sticks turning into snakes, burning bushes, food falling from the sky, people walking on water, and all sorts of magical, absurd and primitive stories, and you say that *we* are the ones that need help?"

Larry Thornton, magician
Calgary, Alberta
Canada

Atlantis Myth

I agree with Kevin Christopher in "Atlantis Behind the Myth: No Way, No How, No Where" (January/February 2002) that Plato's Atlantis story is a noble lie. This exemplary tale was meant to contrast the decadent, imperialistic Atlanteans with their main opponent, the virtuous Athenians of the distant past. . . .

I also agree with the writer that the transmission of the tale to Critias during the Apatouria festival is indeed telling, but not because of its educational context. The Apatouria was the festival where a boy entered a brotherhood which was a step to becoming an Athenian citizen. The festival was associated with the single combat between the Athenian general Melanthus and the Boeotian King Xanthus which was won by the former with help of a trick by the god Dionysus. The festival concerns a deception as does the noble lie of the Atlantis story which was why Plato chose that specific festival for the setting where Critias heard the tale. It may also be relevant that the Greek word *apate* means cheating, trickery, fraud, guile, deceit, cunning, craft; a stratagem in war. Setting the context for such a story during the Apatouria festival would be like telling a wild tale today on April Fool's Day.

Donald F. Nigroni
Glenolden, Pennsylvania

The evidence of Greek historians casts doubt on the story of Atlantis:

Herodotus, who visited Egypt before Plato was born, repeats many stories he had apparently heard from the priests but says nothing about Atlantis. According to Herodotus (Book II), the Egyptians once considered themselves the oldest people in the world, but later conceded this distinction to the Phrygians. If they knew of any civilization 9,000 years old, they didn't mention it to Herodotus.

Thucydides, writing circa 400 B.C., said, "Though I have found it impossible, because of the remoteness of time, to acquire a really precise knowledge of the distant past or even of the history preceding our own period, yet, after looking back into it as far as I can, all the evidence leads me to conclude that these periods were not great periods either in warfare or in anything else" (I,1). Though an Athenian and a contemporary of Plato, he had obviously never heard of Atlantis or else gave the story no credence.

Thucydides does mention (II,32) an island called Atalanta, "lying off the coast of Opuntian Locris," which was uninhabited until the Athenians built a fort there in 431 B.C. Later (III,89), "during this same period when earthquakes were happening so frequently, at Orobiae in Euboea the sea subsided from what was then the shore and afterwards swept up again in a huge wave, which covered part of the city and left some of it still under water when the wave retreated, so that what was once land is now sea. Those of the inhabitants who were unable to escape in time by running up to the high ground were lost in the flood. An inundation of the same kind took place at Atalanta, the island off the coast of Opuntian Locris; here part of the Athenian fortifications were swept away and one out of two ships that were drawn up on the beach were broken to pieces."

These Greek historians, who were in the best position to confirm Plato's story, fail to do so. Instead, Thucydides offers a suspiciously similar story about an island with a suspiciously similar name. From the historical account, it seems likely that the original "Atlantis" was nothing more than a small Athenian-owned island which was flooded, according to Thucydides, in the year 427 B.C. The great lost continent "beyond the Pillars of Hercules" which is supposed to have sunk 9,000 years before surely falls in the category of a "tall tale."

Forrest Johnson
Eugene, Oregon

Strict Popperians?

Twenty-one years ago, I sat in an undergraduate paleontology lecture, listening to a Popperian explanation of the scientific method. At the conclusion, I asked the instructor, Richard C. Fox, why hypothetico-deductivism wasn't obviously reducible to induction, and spent the next forty minutes in an intense debate, forcing my classmates to miss half of their lunch hour (since walking out on Professor Fox was never a good idea). Since then, I have slowly come to the realization that staunch Popperianism is no longer widely accepted among either scientists or philosophers, and was delighted to read Martin Gardner's excellent summary of this subject, and of the constraints posed by induction (July/August 2001 and January/February 2002).

Yet I still encounter strict Popperians among ecologists, paleobiologists, and systematic biologists, leading me to think that these fields may be a last holdout for the hypothetico-deductive approach. It did not surprise me that J. David Archibald, a prominent paleobiologist, rose to Popper's defense in the letters column of your November/December issue. It is my impression that systematists in particular became strongly attached to Popperian criteria as part of the cladistic revolution—an event that took place mostly in the 1970s and was clearly intended to force the rest of biology to take systematics (formerly more commonly called "taxonomy" and now commonly considered part of "biodiversity studies") seriously as a scientific enterprise. Since systematics has strong intellectual ties to both ecology and paleontology, these fields were also caught up in the "we-can-prove-we're-scientists-too!" frame of mind. For many of us who were trained in this heady period, I suspect it is now hard to think of admitting the inductive nature of science as anything other than a step backward, sadly enough. This whole mess was explained to me in my student days as a response, by systematists and ecologists, to being bullied by those with the luxury of controlled experiments and relatively uncomplicated subjects to study.

John Acorn
Edmonton, Alberta
Canada

Scientists and Magic

Your mention of Uri Geller in the January/February 2001 issue (James E. Alcock review of *The Psychology of the Psychic*) brought to mind two events that took place in the 1970s. At that time, in an effort to gain recognition from the scientific community, Geller offered to present a demonstration of his supernatural powers to the senior technical staff of the well-regarded CBS Laboratories, known locally in Stamford, Connecticut, as The Labs.

I was a magic performer then, and happened to know the president of The Labs. He asked me to attend the Geller demonstration, which I agreed to do as long as I was not identified as a magician. Geller put on a mundane magic show to a dozen top scientists and engineers seated around a table. His audience was quite impressed with his performance.

After Geller left, I explained to some of the audience how Geller had done most of his tricks. For example, the elementary trick of divining the picture one of the scientists had just drawn with his hand covering the drawing seemed extrasensory to the subject. This supposed feat was accomplished simply by pencil reading; that is, observing the traverse of the eraser end of the pencil. The man who drew the picture felt disappointed when he learned my explanation because to him paranormal powers seemed, well, at least possible. (Geller's misdirection at the moment of spoon bending was superb.)

A few weeks later, I gave a short magic performance at a private party. One of my favorite tricks was a novel version of the ring-through-string effect, a trick so clever that another magician once offered me $50 to tell him how to do it. After the show, I overheard a lively discussion between two physicists and an engineer speculating on my method. They were fruitlessly fooling around with a ring and string. Words like topological inversion were bandied about. At no time did they recognize that the solution was outside the realm of the physical sciences.

My take on all this was that many scientists are no more likely to understand trickery or to hold truly skeptical beliefs than most folks.

Al Forman
Palm City, Florida

Science and Religion Readers Forum

I was disappointed in some of the reactions in Readers Forum. Some of the respondents forgot that SKEPTICAL INQUIRER has a subtitle of "The Magazine for Science and Reason." It is clear to me that where religion is concerned, some that would otherwise be rigorous in applying skepticism lose their way. Unemotional skeptical rigor applies to claims of religion just as it does to any other claims. Faith dogma and the awesome majesty of the universe must not shield religion against the application of skepticism. The notion is irreconcilable to basic skeptic tenets. Those who allow emotions generated by religion to cloud issues and erect barriers to scrutiny are not skeptics.

If it helps, I'll be glad to sign up for a double subscription to cover the loss of your reader from Atlanta, Georgia.

Guy Hartman
Waldorf, Maryland

Based on the first couple of pages of the Readers Forum section in your January/February issue (the first couple of pages were as much as I could read), some of your readers seem to labor under serious misapprehensions of traditional theistic religious teachings, specifically in the Christian religion.

For example, one reader writes that science is "a method of discovery," while "religion is belonging to a group. That is it in a nutshell." Another writer makes a similar statement, that "the rules of religious faith" are promulgated "to help mankind live in peace and harmonious brotherhood." These rather condescending comments miss the central point of religious propositions—that point being that religion thinks of itself as providing an accurate description of reality. The "group" or "harmonious brotherhood" created by this description is of secondary importance—it is not the *primary* point of religion. Of course, the reality that religion describes is not physical, which moves the description outside of the realm of physical science. If one makes the objection, "Well, the physical realm described by science is the only realm there is," that is a philosophical assertion, not a scientific one. One might even think of it as a tenet of dogma. . . .

At any rate, I picked up the magazine to gain some insight on the latest attacks on traditional Christian teachings. It seems I shouldn't have worried. The attacks seemed for the most part to be attacks on straw men, not on the actual teachings themselves.

Craig Payne
Humanities Dept.
Indian Hills Community College
Ottumwa, Iowa

People who regard the Gaia concept as a theory (Readers Forum on Science and Religion) are likely to dismiss it as "fuzzy metaphysical nonsense" because it makes no specific predictions. However, to treat Gaia as a theory is to misunderstand its role in science. The proper (because useful) role of Gaia is as a heuristic, a suggested approach for thought. For science, it suggests, "Some aspects of Earth's state may not be the historical accidents they seem, but rather may be controlled by subtle long-term feedback systems. Look for them, and you'll discover something interesting." For policymaking, it warns, "If humans push Earth's environment beyond the range where the current feedback systems function, things might change drastically—so watch out!"

Gaia considered as a specific testable scientific theory is vacuous, but Gaia as a program for discovering testable scientific theories could be quite productive, and Gaia as a caution to policymakers might help convince them to prevent disaster. Of course, taking a quasireligious approach to the Gaia concept obscures its scientific and practical aspects.

Richard Stallman
Cambridge, Massachusetts

In response to my article on the impersonality of the universe, Roger Sawtelle asks, "What do you say when scientists find that the universe is one big crap shoot?" Apparently he takes that finding as a fact, so my answer is that you deal with it. A religious belief that does not deal with such an important fact is either irrelevant or flatly wrong.

Further, I do not claim that Sawtelle's three questions are precluded. Questions are never precluded, though sometimes the answer we want is precluded. For the record, here are my short answers to Sawtelle's questions:

What is the meaning of life? Whatever meaning we give it. Why be good? Because we should not unnecessarily harm other people and because society cannot function if we are not good. Is life ultimately fair? No. These questions are not "foolish or unimportant or without meaning," and I never implied they were.

"Is there a God?" is a question of a different sort, since the existence or nonexistence of a God is a matter of fact, and I think that the answer to that question is "No." I amplify my answers in my book and in a forthcoming article, "How To Be Religious Without Believing in God" (*Free Inquiry*, Summer 2002).

Perhaps Sawtelle's discomfiture is not with the questions, but with the fact that my nontheistic answers are not satisfying to him.

Matt Young
Boulder, Colorado

The letters column is a forum for views on matters raised in previous issues. Letters should be no more than 225 words. Due to the volume of letters not all can be published. Address letters to Letters to the Editor, SKEPTICAL INQUIRER. Send by mail to 944 Deer Dr. NE, Albuquerque, NM 87122; by fax to 505-828-2080; or by e-mail to letters@csicop.org (include name and address).

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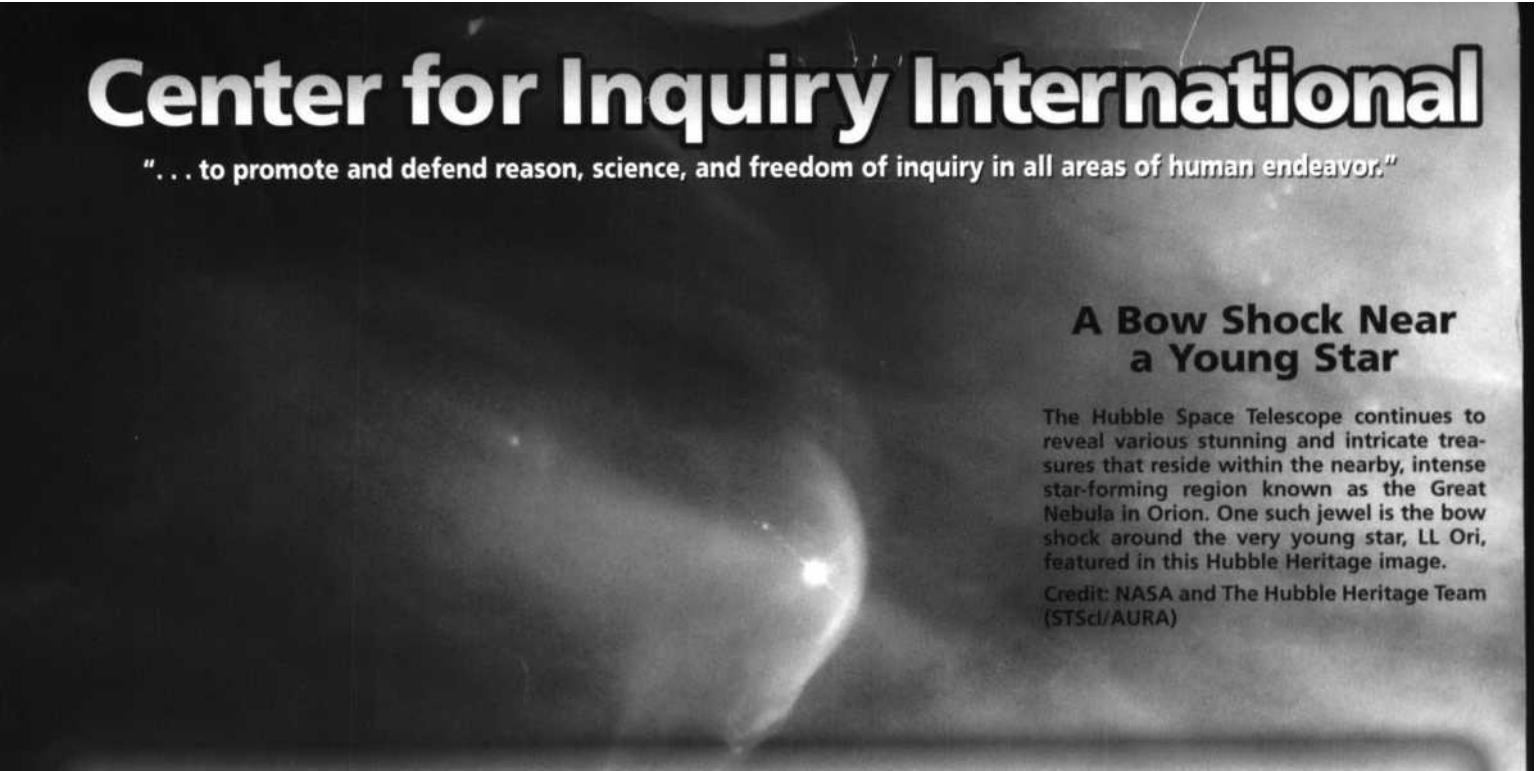

A Bow Shock Near a Young Star

The Hubble Space Telescope continues to reveal various stunning and intricate treasures that reside within the nearby, intense star-forming region known as the Great Nebula in Orion. One such jewel is the bow shock around the very young star, LL Ori, featured in this Hubble Heritage image.

Credit: NASA and The Hubble Heritage Team (STScI/AURA)

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